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Demand for Paper Generally Expanding in Boston

Both Fine and Coarse Paper Markets More Active, With Good Volume of Inquiries Persisting —Book Paper Division Exhibiting Stronger Undertone Than of Late—Bond and Ledger Paper In Better Request—Wrapping Paper Merchants Report Upward Price Trend —Summer Specialties Moving With Greater Speed

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 1, 1933.—A general increase in the volume of sales took place in the wholesale paper market here during the week, with prices still becoming firmer. Confidence continues in business as a whole. Inquiries persist in good volume, in both the fine and wrapping divisions of the trade.

It is felt that April has been a fair month in fine papers. During the last week, Boston merchants have been busy revising prices on book papers, according to figures sent out by various mills. As an indication of greater business and prospects of more activity a fairly substantial amount of advertising is being placed, with the consequent demand for paper for this purpose. Bonds and ledgers have come in for their share of the increased call.

Favorable reports are heard from the wrapping paper merchants, with the price trend upward. Northern mills manufacturing No. 2 kraft have withdrawn prices. Actual advances have been made in some special lines of paper, such as gummed tape. Specialties for the summer season, such as drinking cups, paper napkins, paper plates, and spoons for picnic, park and shore resort purposes, started to move with greater speed and in larger volume.

There is just a trifle more buying in box board. Tonnage in folding box board increased. Manufacturers of setup boxes are still getting the benefit of the puzzle makers' business, although the volume of sales has fallen off to some extent. Sales of material for the puzzles themselves have likewise declined.

The price of filled news board has again become $30.00. It was advanced to $32.50 a while ago, but due to a fall in the demand for this grade of board, the quotation has been reduced, and is more in line with chip board, still at $27.50.

Paper Stock Outlook Favorable

Conditions appear favorable in paper stock from some points of view, although prices have not advanced. The trade is awaiting developments in the monetary situation. Customers of one firm in this country say they are not going to advance prices, although higher figures are asked in at least a number of grades. This is true in a number of grades of bagging. For instance, the current price paid for foreign gunny No. 1 is $1.00, but $1.10 is asked. Similarly in the following grades: Foreign manila rope, current price, $1.40, against $1.55 asked; transmission rope, $.90 against $1.10; No. 1 scrap burlap, $.50 @ $.62½ against $.95; heavy wool tares, $.65 @ $.75 against $.95. In foreign rags the current price for old linsey garments is $.55 @ $.65, with $.70 asked. There is, accordingly, a deadlock, at least on some grades, but it is stated that consumers have a supply for two or three months on hand, so that they are not actually obliged to make purchases.

There has been a fairly good stimulus in the twine business in the last few days. Buyers are trying to cover against prospective higher prices. While some prices continue withdrawn, some have been advanced and others have not been marked up.

News of the Trade

A meeting of the sales force of the Storrs & Bement Company was held at the office of the S. D. Warren Company Friday evening, at which the new price schedule and selling arrangement effective in the book paper industry May 1 were given out. Ernest Johnson, manager of the Warren field operations in the Boston district, presided. There was a full attendance of the sales force.

The American Writing Paper Company has appointed Rutter & McNaught agents for the Dickinson Offset Paper. The firm will carry this line in stock in various standard sizes.

The Arnold-Roberts Company is offering the No Make Ready Envelope. One of the outstanding features of this envelope is a special high cut back and wide flap to do away with make ready over seams. It is made in bright blue white and of strong durable stock.

E. D. Reynolds, formerly in charge of the Boston office of the United Paperboard Company, now with the Poinier-Carmer Company, was married to Miss Robinson, of Boston, in Waterville, Me., on Saturday. They expect to return to Boston on Wednesday. Mr. Reynolds has the best wishes of his friends in the trade.

Clifford Pinkham, sales representative of the Dill & Collins Company, Philadelphia, called on the local distributors last week. Mr. Pinkham nas completed arrangements for his summer residence at Marblehead, Mass., where his family will be for five months, beginning May 1.

Control of News Print Industry Advocated

Renewed Demand Experienced In Canada for Action By Financial Interests Involved, With View of Stabilizing Conditions—Wide Differences Separating Various Interests May Result In Operation of Old Law of the Survival of the Fittest

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que, May 1, 1933.—Since the announcement of a further cut in the price of news print there have been renewed demands in the public press here for action on the part of the financial interests in control of the various companies with a view to establishing control of the industry as a whole. At the same time there is a general feeling that the wide differences separating the various interests, and the seeming impossibility of bringing about anything in the nature of equality of sacrifice, will mean that in the end the situation will be solved only by the operation of the old law of the "survival of the fittest." The operation of this law cannot be long delayed under present conditions. Many of the companies will soon be compelled to seek further assistance from the banks, especially for the replenishment of their disappearing wood piles, and as the banks have already made substantial advances, there is little likelihood that they will be inclined to extend further credit to mills operating at a loss on every ton of news print they turn out. If that should prove to be the case, then mill after mill will be closed, and production concentrated in the survivors.

As matters stand now, news print prices work out at only around 85 per cent of the price prevaling in 1913, allowing for the fact that the chief items of cost are now from 25 to 100 per cent higher, with the exception of power.

The fact that news print production, at the base levels of last month, was only 35 per cent below the peak production of 1929—a very favorable operating record when comparison is made with other major industries—indicates the unhealthy conditions prevailing within the industry itself which have been very substantially responsible for the sad plight in which the industry now finds itself.

Bankers' Committee Still Functioning

Meanwhile the Bankers' Committee, which for some time past has sought ways and means to bring together various units in the industry and achieve comparative stability, is still functioning. Sir Charles Gordon, president of the Bank of Montreal, who is a member of the committee, stated this week that the difficulties confronting this committee were formidable. The committee, he said, represented units which provided only about half the tonnage capacity of the industry and those not represented on the committee had taken advantage of any stabilizing efforts. He stressed the difficulty of effecting stability when there were three million tons of capacity and only two millions tons of consumption, and added, "In all my experience I have never witnessed an industry so completely demoralized as the news print industry is at the present time."

Anglo-Canadian Co. in Favorable Position

That the Anglo-Canadian Pulp and Paper Mills at Quebec have suffered more lightly than other Canadian mills from conditions existing on this continent, was the testimony given at the annual meeting of the shareholders of the *Daily Mirror* newspapers and *Sunday Pictorial* newspapers in London. According to overseas dispatches, John Cowley, chairman of the companies, said that arrangements had been completed for redeeming the 6½ per cent debentures of the Anglo-Canadian Pulp and Paper Mills and replacing them with securities bearing 5 per cent.

The net effect of this arrangement will be to release the Anglo-Canadian Pulp and Paper Mills of a very substantial sum each year for interest charges, and will mean that the *Daily Mirror* and *Sunday Pictorial* companies, in addition to their very considerable holdings of preference and common shares, will own 100 per cent of the debentures of that company.

Anglo-Canadian Pulp and Paper Mills owns extensive timber limits and one of the most modern paper mills in the world, which is situated in the city of Quebec and is fully equipped to produce 150,000 tons of news print per annum. The surplus of assets over liabilities, excluding therefrom the guaranteed mortgage debentures of £3,000,000 as at December, 1932, was round about $22,000,000, which represents, at $4.12 to the £1, over £5,300,000.

For the twelve months ended 31st December last the Anglo-Canadian Pulp and Paper Mills had a surplus on its year's working, after allowing for depletion, depreciation and debenture issue.

Affairs of Price Bros. & Co.

Possibility that Price Bro. & Co., Ltd., now declared in bankruptcy, may be liquidated under the winding up act instead of the Bankruptcy Act is seen as a result of a meeting of the creditors in Quebec City, presided over by Wilfrid Edge, K.C., Registrar of the Bankruptcy Court. A resolution was passed authorizing the trustee to adopt this procedure if after due consideration he came to the conclusion that it would be to the advantage of the creditors.

A statement presented on behalf of the company showed an excess of $43,539,613 of assets over liabilities. The liabilities listed in the statement show the banks as secured creditors, as follows:

Royal Bank of Canada, $1,807,299, and Bank of Montreal, $1,783,466. The total outstanding on bond issues of the company is $11,061,600, while bond interest in default amounts to $774,312. Unsecured creditors are represented in the sum of $903,855.

The principal items in the assets of the company are shown as follows: Stock in trade, $2,987,848; book debts, $858,169; cash in bank, $12,121; cash in hand, $6,558; real estate (free of mortgage) $478,073; estimated freehold lands, plants, buildings, etc., subject to bond issues, $55,104,575, and investments (book value with allowance for depreciation), $1,500,000.

At the creditors' meeting the Hon. Gordon W. Scott was appointed trustee and the inspectors named were: C. R. Whitehead, of the Consolidated Paper Company; R. E. Powell of the Duke-Price Power Company, Ltd.; and J. B. Bevan, of the Imperial Oil Company. It was decided to continue to operate the business, and the trustee was authorized to borrow money for that purpose.

St. Lawrence Corp. Reports

At the annual meeting of shareholders of the St. Law-

rence Corporation the financial statement for 1932 was passed and the board of directors re-elected as follows: A. K. Cameron, Montreal; Geo. R. Cottrelle, Toronto; H. C. Flood, Montreal; Sir Charles Gordon, G.E.B., Montreal; H. H. Horsfall, Montreal; Lieut.-Col. Herbert Molson, C.M.G., M.C., Montreal; E. W. Pittman, New York; J. J. Rankin, Montreal; W. Wynne Robinson, Montreal; Ernest Rossiter, Montreal; Hon. Gordon W. Scott, Montreal; R. W. Steele, Montreal; R. O. Sweezey, Montreal; N. A. Timmins, Montreal, and A. F. White, Toronto.

Quebec Pulp & Paper Elects

At the annual meeting of the shareholders of the Quebec Pulp and Paper Corporation it was reported that the consolidated loss for the year amounted to $192,256, being $9,390 less than in the previous year. Reductions justified by prevailing conditions were made in the book value of the mills, equipment and timber lands, which were reflected in the deficit account now amounting to $2,959,007. A. Stewart McNichols, president, in his report said:

"During the year the company sold its Chicoutimi plant, comprising mills, power sites and equipment, to Chicoutimi Mills, Ltd., and received all the shares of the capital stock of the latter in payment. This sale should in time prove helpful in dealing with the problems affecting these mills. The annual meeting will be invited to give formal approval thereto.

"In the concluding statement of their report last year, your directors stated that economic conditions will have to show material improvement before their efforts towards solving the company's problems would bear fruit. Unfortunately, the further reverses suffered during the year by the pulp and paper industry have adversely affected the value of the company's assets, as a consequence of which it may become necessary in the near future to revise its financial structure to conform to altered conditions.

"Any required change in the capital structure of your company would be submitted to the preferred and common shareholders for their consideration."

The election of directors and officers of the company resulted in the following:

Board of directors—President and chairman of board, A. Stewart McNichols, Montreal; vice-president, C. R. Whitehead, Montreal, and Edward Flynn, Quebec; George McKee, Montreal; George Henderson, Montreal; G. B. Elwin, Quebec, and John H. Price, Quebec.

Neah Bay Pulp Logging Co. Busy

PORT ANGELES, Wash., April 29, 1933—The Neah Bay Pulp Logging Company of the Washington Pulp and Paper Corporation is rapidly increasing its crews to 200 and preparing to log during the summer months from Indian timber tracts and private lands adjoining the Makah Reservation, seventy-five miles west of here.

Four miles of standard guage railroad has been constructed from Neah Bay to Sail River and the harbor at the mouth of the Sail River has been dredged to permit rafting of the logs which will be towed to pulp mills at Port Angeles and Port Townsend.

Roger Wood to be Sales Counselor

Roger Wood, for the past nine years head of the Roger Wood Industries of Lafayette, Ind., and past Governor of the Sixth District A.F.A., has been appointed sales promotion counselor of The Miami Valley Coated Paper Company, Franklin, Ohio.

Union Bag Strike Settled

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., April 29, 1933—An agreement has been reached under which the strikers at the Fenimore branch of the Union Bag and Paper Corporation will return to work at an estimated reduction of 33 per cent in wages. The men left their jobs last spring in protest against a cut of 16 per cent which forced the abandonment of the mill. Preparations for placing the mill again in operation are under way and it is expected that activities will be under way within several weeks. The decision to return followed a meeting of the workers with officials when the proposition of the company was explained. While refusal to recognize the union has been the chief obstacle in delaying a settlement it was pointed out that the agreement was reached with recognized union leaders in attendance. Among those in attendance at the conference were Alexander Calder, president of the company, John P. Burke, head of the Pulp, Sulphite and Paper Mill Workers, and Arthur Huggins, secretary of the International Brotherhood of Papermakers.

The strike has affected about 175 workers who have been idle since the plant was abandoned. Prominent labor leaders expressed themselves as pleased with the terms of the settlement. It is understood that the proposition under which the workers will return calls for a wage scale ranging from 30 cents per hour for laborers to 62 cents per hour for machine tenders. The local Chamber of Commerce was largely instrumental in bringing about the negotiations and have already been commended for the interest displayed. Under the proposition the company will not expect the workers to seek any wage revisions before December 31, 1934, while the scale after that time will be determined upon conditions. The scale accepted is said to be 20 per cent lower than the one offered last spring but is said to compare favorably with the rates in other paper mills.

It was pointed out by Mr. Calder that the company had no idea of the developments which have arisen since last spring and that acceptance of the 16 per cent cut then would have resulted in operation of the mill at a loss. "By purchasing paper from the South and Pacific Coast," he said, "we are able to save considerable and if we are able to do this by shipping the material here it is only natural to assume that a much larger saving would be brought about by moving our factories to the source where it comes from. In view of these facts we had already made plans for moving to the South but these can be postponed for an indefinite period if we are able to obtain a spirit of cooperation from the residents of the village."

Mountain Mill Sold

[FROM OUR REGULAR CORRESPONDENT]

LEE, Mass., May 2, 1933—Announcement was made Saturday that the Westfield River Paper Company had bought from Louis E. Stevenson the Mountain Mill and the Lake May Power Company. The Mountain mill went into the hands of a receiver about two years ago. The sale price was given as $100,000.

Paul F. Moore of Springfield represents the new owners and he plans extensive repairs before opening the Mountain mill for the manufacture of paper. The Mountain mill has been almost continuously operated since 1854. It was formerly the Benton mill and had been almost continuously operated by members of the Benton family until its sale to Louis and E. P. Stevenson. After a few years Louis bought out the shares of E. P. Stevenson.

Activities of Wisconsin Paper Box Mills

Johnson Box Co. to Start Production of All Kinds of Corrugated Containers Shortly In Former George J. Meyer Mrg. Co. Building, Milwaukee — Hummell & Downing Paper Carton Container Plant Very Active—Fifty Employees Added Recently

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 1, 1933—Manufacture of all kinds of corrugated containers is contemplated by the Johnson Box Company, a new concern organized at Milwaukee, Wis., with Earl F. Johnson as president and treasurer. The company has leased 20,000 square feet of floor space at 1570 South First street, in the former George J. Meyer Manufacturing Company building. Machinery is already being set up, and production is to start in about ten days.

Other officers of the company are E. G. Bradley, vice president, and Attorney T. T. Churchill, secretary. Mr. Johnson has been associated with the box industry in Milwaukee for twenty years, and Mr. Bradley for 25 years. About 35 men will be employed when manufacturing starts.

Addition of fifty employees within the last few days, bringing the total number in the plant to 750 is announced by John L. Barchard, president of Hummel & Downing, Milwaukee, Wis. The box factory is now operating on a forty-hour week, and the paper mill on three eight hour shifts daily. Each man works a maximum of forty hours per week under a plan of staggering employment.

Mr. Barchard reports business at this time as "Very good." He states that the return of beer has not only been responsible for a decided increase in demand for paper carton containers, but it has also stepped up trade in allied lines, with emphasis on the consuming commodities. With the advance in commodity prices, Mr. Barchard believes there will be a continually increasing demand for folding cartons, shipping containers and box board. "Conditions generally," he says, "are looking better to me every day."

Shorter Working Week Advocated

For some time Mr. Barchard has been an advocate of a shorter working week. He regards the proposed thirty-hour week as a good thing for the country. He feels that employers in the United States have had two years in which to initiate a shorter working week and that, not having put it into effect voluntarily, its introduction as a federal statute now is the best thing for the industry. Adoption of the forty hour week at Hummel & Downing some time ago was done to give as many men as possible partial employment. It would have been cheaper, Mr. Barchard said, to lengthen hours and dismiss men, but the present course has proved more helpful.

Aside from his business duties, Mr. Barchard is president of the Wisconsin State Chamber of Commerce. As such, he has been appointed by Governor A. G. Schmedeman as a member of the Wisconsin citizen's committee for state promotion at the Century of Progress Exposition in Chicago. He is also a member of the Milwaukee Harbor Commission and the Milwaukee Association of Commerce.

News of the Trade

Large scale cutting and peeling of pulpwood will be conducted this summer by the Weyerhaeuser Company of Cloquet, Minn., according to H. C. Hornby, general manager. Operations will be carried on in the Isabella district between Little Marais and Ely, Minn.

A crew of about 500 to 600 men will be employed for the summer, it is stated.

Two paper mill cities are involved in an effort at rate revision before the Interstate Commerce Commission. Green Bay, Wis., is attacking the favorable rate adjustments which Marinette, Wis., and Menominee, Mich., have obtained particularly on freight traffic moving to and from eastern territory. Green Bay sought to show that while its distance was in some cases less than the distance from Marinette and Menominee to eastern destinations, still Marinette and Menominee had rate advantages over Green Bay. The presence of lake car ferry service at Marinette and Menominee, with none at Green Bay, is said to have had its influence on rates. Shippers of the two cities attacked are uniting their interests to prevent changes in the present freight rate setup.

Serious subjects and technical discussion will have little place in the next meeting of the Lake States Section of the Technical Association of the Pulp and Paper Industry, according to plans made by the officers. The meeting is to be held May 9 at Rainbow Gardens, a popular amusement place near Appleton, Wis. Officers will be elected, and business will then be cast aside in favor of entertainment. Dinner will be served, and there will be a stage show, boxing and dancing.

Forest fires are beginning to menace the timber areas of northern Wisconsin. Two were discovered last week, one of which burned over 500 acres in Bayfield County. With the opening of the trout fishing season on May 1, it was expected more hazards would be created than ever. A large organization has been made up to fight fire in all areas, and it is expected quick detection will prevent any but minor losses.

Movement of coal to paper mills from the docks at Green Bay, Wis., began along the Fox River this week, with the official opening of navigation May 1. The season was closed longer than usual, owing to repairs to locks in the lower river and the necessity of completing certain stages of the work before shipping could be started.

Jewell & Peck Reorganized

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y. May 1, 1933—A reorganization of the Jewell & Peck Paper Corporation has been effected and from now on the company will be under the control of Corwin T. Jewell. The interest held by Ralph C. Peck has been acquired by Mr. Jewell and the new arrangement has already become effective. The company will continue to conduct a general jobbing business in paper, twines, school supplies and other lines under the same policy as heretofore. Prior to forming the concern Mr. Jewell was identified with the St. Regis Paper Co. as an executive while Mr. Peck was also connected with prominent paper mills. The latter has not yet announced his future plans.

Arnold-Roberts Appointed Agents

The Arnold-Roberts Company has been appointed the exclusive New England distributor in Boston, Providence, New Haven and Springfield for all the mill brand lines made by W. C. Hamilton & Sons including the new lines of Rag Bonds, Old Treaty Bond and Comptroller Bond.

Chicago Paper Market Rules Quiet But Firm

Fair Demand Experienced for Various Standard Grades of Fine Papers — Book and Cover Papers Continue Steady—Some Improvement Reported In Sulphite Bond Division—Kraft Wrapping Paper Section Displays Strength—Paper Board Industry Steady

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 1, 1933—Comparatively quiet but firm is the report on paper conditions in Chicago for the past five days. The nationwide effort to lift the country out of the depression by way of the inflation method has as yet had no salutary effect on the paper market except perhaps to help it in stability and in a quietly growing demand that becomes more impressive every day. Between now and the summer dullness representatives of all lines hope to have definitely left sloppy markets behind and embarked upon an even and upward trend.

The sulphite bond market is reported to have overcome a reported slight tendency toward irregularity and market representatives are working together in encouraging fashion. Fine papers in general experienced a fair demand although spotty to some extent. Krafts continued with a strong undertone, the price here considered as decidedly encouraging. Book papers were steady with a more healthy demand reported, while cover papers were virtually unchanged. Paper board is reported to be making a better showing this year than last, in most instances. Ground woods remained practically unchanged as did news print, though in both markets persistent reports of strengthening were at hand. Slight increases in tonnage were reported in the ground wood market. Waste papers are beginning to share slightly in the general improvement.

Paper Box Makers Oppose Five Day Week

The proposed five day week, six hours per day, as provided for in legislation now before the Congress of the United States, would work a great handicap on the paper box industry in Illinois, according to statements from executives in the industry. The Merle Sears Paper Box Company, Danville, is one of the strong opponents to such legislation, particularly on a state basis. Mr. Sears has given the following opinion to the Illinois Chamber of Commerce as a member of that organizations legislative committee: "Such legislation would be a great handicap. The paper box industry ordinarily has a rush season in the Fall and it is necessary, at that time, to work six days and either nine or ten hours a day to fill the orders and that is the only time of the season that the industry has a real opportunity to make a small profit.

"This five day week would work hardships on employees more than employers, inasmuch as their wages would be reduced accordingly. We believe that if any such legislation is passed it should be national so that every State would work under the same law. Our industry, however, would be entirely satisfied with forty-five hours per week with the privilege of working over time during the last three and one-half months of the year. We, in Danville, have run our plant in these slow times so no real hardships to employees would result. We have been running five days per week and eight hours per day and have kept the full force on the pay roll, although a great many of our employees have not had full time."

Manufacturers of the State are said to be almost unanimously in accord with Mr. Sears except that the majority would go even further and protest vigorously against Federal legislation because of the wide variations in labor demand and in manufacturing; because of the handicap it would be to the initiative of industry and because it would be a tremendous additional load to the already heavily burdened government employee rolls.

Paper Merchants Discuss Sales Tax

The Chicago Paper Association held its regular meeting on Tuesday evening April 25, the discussion centering almost entirely on the state sales tax. The meeting clearly showed the divergence of opinion on the part of purchasers as to whether or not the tax is to be collected in jobber transactions where the purchase seems to be for the "ultimate consumer." The Association will continue its efforts to collect the tax pending a decision from the State Department of Finance. This decision, in turn, is being held up while the Illinois Supreme Court ponders over a restraining injunction which among other things, restrains the Department from spending any money on administering the tax.

Two members of the Association, M. A. and James F. McNulty, are making preparations for a dual birthday celebration to be held at the Chicago Athletic Association on May 1. The twin brothers will be 40 years old and some twenty friends will be on hand to aid them in celebrating the event. It is also forty years since the 1893 Worlds Fair in Chicago so the group will have something else to celebrate about in view of the fact that the 1933 Exposition opens in June.

Writing Paper Manufacturers to Meet

The Writing Paper Manufacturers Association is holding a meeting at the Drake Hotel, Chicago, on May 3. Emmett Naylor, secretary, will be in charge of the discussion which is expected to center around continued efforts to encourage the sulphite bond market in the right direction.

News of the Trade

The Pioneer Paper Stock Company, is doing a good job of capitalizing on the announcement that it has been selected to provide the waste paper service for the Century of Progress Exposition. Pioneer trucks are going around Chicago gayly bedecked in bunting and prominently displaying placards calling attention to their selection and to the fact that the company has provided 54 years of service to Chicago business.

George Birkenstein was elected president of S. Birkenstein & Sons, Inc., at a meeting of the board of directors of that company held on April 26. He will succeed Louis Birkenstein, who was made chairman of the board. The company operates a large waste metal company on North Avenue in Chicago. The announcement will be of especial interest to waste paper dealers inasmuch as Mr. Birkenstein is head of the National Waste Material Dealers and has been very active in the affairs of this sssociation of which the waste paper group is an important part.

From the Butler Paper Company comes the report that R. G. Whale has joined the Nekoosa-Edwards Paper Company, Port Edwards, Wis., and will assist that concern in the development and advertising of fine papers. Mr. Whale was recently secretary in charge of promotional work of the Butler Paper Corporation, Detroit.

Ontario Paper Mills Operate On Reduced Scale

Anticipating Increased Prices, Some Fine Paper Manufacturers Are Refusing to Renew Contracts On Old Basis—Coarse Paper Market Shows Signs of Improvement—Kraft Wrapping Paper Production Being Built Up by New Uses

TORONTO, Ont., May 1, 1933—It was learned this week that some of the fine paper mills have been refusing to renew contracts with customers at the old figures of some months past. Arguing that increasing tendencies in commodity prices would probably soon include paper of all classes, producers of both fine and coarse papers are hesitating about renewing contracts and some of them have turned requests for renewals down flat. Both manufacturers and paper merchants have been undergoing a shrinkage in production and sales during the past several months and while there has been some slight improvement in a few lines the general experience has been that business is hard to get and what there is going is of a highly competitive nature.

As far as the paper wholesaler is concerned the comparatively light sales that have been recorded of late are probably due in part at least to the fact that he has been drastically curtailing his credit. This means, of course, that he is getting paid for the paper he sends out although the number of accounts is smaller. He argues, however, that his business is on a better basis through tightening up on his credit accounts and in this way he can afford to accept a less number of orders. At the present time both wholesalers and manufacturers are operating on greatly reduced scales with the consuming public buying paper from hand to mouth. The printing trade throughout the province continues dull and their orders on the paper houses are still at a low level. Fine papers generally are moving slowly and there has been no improvement in the coarse paper market.

Paper box manufacturers have not much in sight in the way of summer business and the board mills, in turn, are operating lightly. There is a light call for grease proof, glassine, waxing and other lines and manufacturers of tissues and toilets are operating from four to five days a week. There is a seasonal demand for tissue specialties but it is light and has been slow in opening up. Mill activity has not improved in book, bond and ledger papers and there has been a light call for coated stock for some months past. The kraft paper market has been showing slight signs of improvement. New markets for kraft production are being built up, this class of paper, widely used for some considerable time in the manufacture of cement containers, being now in growing use for sugar and flour bags—especially the latter. Flour millers in general have been slow in adopting the kraft bag, but as a result of experiments that tend to show the kraft container to be more economical, a wider use in the future is looked for.

Safety Matters Under Review

Safety matters, compensation and hazards in the pulp and paper mills of Ontario were under review at the annual meeting of the Ontario Pulp and Paper Makers' Safety Association in Toronto when it developed that while accidents have increased there were very good underlying reasons for the inferior showing as compared with previous years. A. P. Costigane, secretary-engineer, in his annual report, pointed out that during last year's operations some mills had an increased production with the same number of employees as were at work under lesser turnover. In others again, due to lessened production, there have been economies in labor necessary to enable the mill to keep running and in some cases to keep up *pro rata* production at a lower market price. The general effect on employees resulting from these causes seems to indicate a lessening of spirit through fear of unemployment, a reduction of general vitality and possible under nourishment.

"With a reduced number of employees," stated Mr. Costigane, "there has been an increased number of accidents although only by comparison with the best previous record of the industry, but not by comparison with a number of years record, such a comparison if made would show this years record a good one. Careful examination of all returns shows a reduced number of accidents from machinery hazards and from preventable causes generally, but those causes strictly manual or hazards of morale are greatly increased. Strains from lifting, etc., due to over exertion, accidents from dropping articles presumably due to nerves, slipping and tripping through haste to keep things working, reflect a very serious hazard during the anxious year under review. Little can be done to meet this situation except through careful watching, cautioning and training amongst the employees.

The question has become that of the condition of the individual and how he is personally affected, the spirit of *esprit de corps* which has been evident for some years must of necessity be greatly intensified during this period of industrial stress, if results are to be obtained. It would seem that some more organized work should or might be done by mill officials to reduce the general tendency toward morale hazards by sympathetic and careful training, talks, notices and observations of individual actions of employees while pursuing their vocations." It was reported that the non fatal accidents for the year 1932 totalled 600 in comparison with 597 for 1931. Fatal accidents for the year remain the same as for 1931, namely three in number. This result is not considered satisfactory as during 1932 the number of employees decreased from 7,781 to 7,615.

President A. T. Brown presided over the gathering and in his address he dealt with the increase in compensation rates, urging every one in authority in the industry to give grave consideration to the problem of accident prevention with a view to making 1933 a record one in decreased number of accidents.

H. J. Halford, of the Ontario Workmen's Compensation Board, spoke briefly, stressing the importance of the Board's work and urging those present to concentrate even more fully on the great work of accident prevention.

W. C. Millar, Chief Sanitary Inspector for Ontario, submitted his report in which he stated that woods operations for the past year were about one-sixth those of normal years, total accidents for the year being 194 cases, 165 being compensation cases and 29 medical aid cases.

Accident record competitions and their results were announced as follows: Class A. winners, Abitibi Power and Paper Company, Iroquois Falls; runners-up, Spruce Falls Pulp and Paper Company, Kapuskasing; Class B., Buscombe & Dodds Company; runners-up Abitibi Power and Paper Company, Sturgeon Falls.

First aid contest—Winners, Howard Smith Paper Mills, Cornwall, Ont.; runners-up Kenora Paper Mills, Ltd., Kenora.

Demand for Paper Declines in Philadelphia

Fine Paper Distributors Report Falling Off In Business of Approximately 10 Per Cent During April, Compared With Record for March—Coarse Paper and Allied Lines Slightly Less Affected—Paper Stock Market Conditions Improve

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 1, 1933—Looking backward over the month and particularly as the story is revealed on account books, the retrospect, in virtually unanimous trade opinion, is not a satisfactory one. As compared with the record of March, April shows a decline in business of approximately 10 per cent for the fine paper houses, but a slightly less one for the coarse paper and allied lines. But looking forward in the light of what has taken place and is pending at Washington and economic conditions as they are reflected in this great industrial city, the trade is ever so much more confident than it was a month ago.

There is a general feeling that much of the long existing doubt has been dispelled, and while there is no unanimity of concurrence in the permanence of proposed financial and industrial experiences, there is an overwhelming sentiment of confidence in those who are directing the destinies of the Nation, and a willingness to accept their plans and to cooperate and await the result.

In the paper stock end of the business, the record of April is slightly better than that of March, but this is only comparative, because as a matter of fact, there was then and still continues, virtual stagnation. The packers find no difficulty in disposing of the limited amount of stock which they are gathering up, if they are willing to dispose of it at the price set by the mills, and this price is so low that there is no inducement to bring stock into their warehouses. The market is completely cleaned up and all the packers assert that with the slightest increase in activity in buying among the mills, a firming of prices, or advance at least to the point of making the packing of stock profitable, is certain.

Paper Trade Association Meets

The finer spirit of confidence—bordering even on enthusiasm—which exists today among the fine paper distributors, as compared with that of a year ago, very largely is due to the splendid reports received and action taken at the deferred meeting of the Paper Trade Association of Philadelphia, which was held on last Wednesday afternoon and at which were present representatives of D. L. Ward Company, Garrett-Buchanan Company, Wilcox-Walter-Furlong Paper Company, Schuykill Paper Company, the Paper Merchants, Penn Card and Paper Company, Raymond & McNutt, Molten Paper Company, J. L. N. Smythe Company, and Satterthwaite-Cobaugh Company. The list evidences that with two or three exceptions, it comprises all the leading firms in the fine paper business, and of those exceptions all but one are members of the association.

The results of the conference between the distributors and the mill men, recently held in New York were, of course, of paramount interest, and these as described by Mr. Wilcox were most satisfactory and gave every evidence, in his opinion, of permanent good to the distributor. As will be recalled, the distributors are particularly concerned with direct mill selling and with recommended resale prices. The attitude of the mill men generally was found to be sympathetic, although from the point of view presented, certain obstacles will have to be overcome which had not been so apparent to the distributors before the conference. While definite decision remains for the future, belief exists that substantial progress has already been made in the stabilization of suggested retail prices, particularly on lots from one ream up to four cases out of the jobbers' warehouses.

To Investigate Trade Abuses

But the outstanding accomplishment of the association's meeting was the unanimous adoption of a resolution suggested by and, therefore with, the full approval of the Typothetae of Philadelphia, asking that the Federal Trade Commission send to Philadelphia an investigator for the purpose of receiving the points of view of both fine paper distributors and their chief customers—the printers—to the end that long existing demoralizing trade abuses may be remedied. The printing trade is suffering from unethical practices confined not alone to the smallest printers but to some of the more extensive ones as well, and the fine paper houses—even more than the printers—are adversely affected. There have been a series of conferences between the two groups, result of which was a decision that an investigation by the Federal Trade Commission, at the request of the paper trade rather that of the printers themselves, would be most effective. It is hoped that something can be accomplished in the way of remedying the evils of price cutting far below cost of material and labor, of substitution where specifications call for a definite brand of paper and of the substitution of lighter weights, even when the brand requirement is complied with.

For many years, the Typotheatae has made exact studies of hour costs of production and these, it is believed, can be laid before the Federal Trade Commission, should it choose to enter into the subject, with convincing completeness. The interest of the paper trade is, of course, very direct in the maintenance of fair prices because it has suffered, as have manufacturers, from substitution, and because firms, both large and small—which under the stress of the times—have been induced to depart from legitimate customers—have caused large losses to the paper trade through both honest failures arising from ignorance and from dishonest failures. Hitherto the only protection which the houses have been able to secure for themselves is voluntary cooperation of the Typotheatae and the maintenance of their large and rapidly growing cash basis list.

The paper trade, which constitutes a section of the Typotheatae, will participate in its annual outing and annual election, to be held at the Manufacturers Country Club on Mondy, May 22. This meeting will be enlivened by the usual games and sports.

News of the Trade

The Philadelphia Paper and Cordage Association, in which membership is held by many of the coarse paper houses, meets this Friday in the office of President Hooper for a conference. At the regular meeting this month Leslie L. Bartlett will present a formal report.

The Philadelphia Paper and Bag Institute meets on Wednesday of this week at the Elks Clubhouse, particularly to discuss prices on seasonable goods. There is much activity in paper cups and containers. Business generally was reported improved in April as compared with a year ago,

(*Continued on page 43*)

The New Business Era*

By Charles W. Boyce[1]

In the past two months thngs have happened in rapid succession. Legislative activities have been particularly intense. The President has undertaken the leadership in a tremendous drive to eliminate the maladjustments, the uneconomic practices and the weak pillars in the foundations of the business structure. Progress has been made. A new optimism prevades business, a new spirit is awakening that will, we may have no doubt, carry us on to a finer, less transient prosperity than any we have ever known.

But the accomplishment is not solely a responsibility of the President. It is now more than ever before a responsibility of industry itself. And industry, now beginning to realize its obligations in the social as well as in the financial and industrial fields, is preparing to do its share in creating the New Business Era.

No Speed Limits in the 20's

It is not difficult to conceive of the trade association as a watch tower at the cross-roads of industry. From the tower we could see industry rollicking along during the 1920's in high powered, well equipped vehicles. There were no speed limits. The swiftly moving traffic carried all with it. One could not slacken his pace or change his direction for the highway was broad and smooth, and there were no detours.

But in 1929 industry reached the end of the pavement. Since that time, it has bumped along over a road that has become increasingly rough and difficult to travel. Today industry approaches a bridge beyond which lies a new and better road.

Some years ago an old Indian who had become exceedingly wealthy in the Oklahoma oil boom, visited the showroom of one of America's best automobile manufacturers. He examined the latest in V 12s. It appealed to him and he purchased it paying for it from a tremendous roll of bills that he hauled from his pocket. A few hours later he returned in a somewhat battered condition, but, undaunted, he asked for a duplicate of the car he had just purchased. The surprised salesman, no doubt delighted with the prospects for a double commission, could not refrain from ejaculating "How come?" The Indian's reply was that the first car was wrecked.

It seems that the old fellow thought that such an event warranted celebration and he immediately purchased a supply of a local brand of fire-water. He then drove down the street. Seeing a large truck approaching he pulled aside to let it pass. While waiting he sampled the fire-water. A little later he pulled aside to let a parade pass, and he proceeded much farther—much too far with the sampling process. In an exceedingly happy frame of mind he drove on. Suddenly he saw a bridge approaching. He pulled aside to let it pass, but it hit him.

As industry approaches the bridge that leads to the better highway, let us hope that we may be able to evaluate correctly which is the moving and which is the immobile element.

Industry in general and the paper industry in particular has no quarrel with those who are responsible for actual manufacture. During recent years of depression our production men have accomplished wonders. Today, our paper is better than ever before. There are wider ranges of varieties and costs have been greatly reduced. The industry's difficulties are not here; they are in the management of production and in the distribution of products.

Possibilities of Remarkable Stability

The paper industry has possibilities of remarkable stability, because of the wide diversification of products and because of the character of their use. In 1932, for instance, paper consumption in the United States was but twenty-eight per cent under the peak consumption of 1929. An industry fortunate enough to have such a stable demand should itself be stable. But the annual reports with which our trade journals have been filled in recent weeks, tell a different story—not one of stability.

We may properly ask why? The chief reason lies in the fact that the industry allowed its prices to get away from it. It now faces a double-barrelled problem of rebuilding demand and of rebuilding the price structure. The former is a problem that is in many important aspects not within the power of the industry alone. The latter is controllable, and it is here, in the adjustment of conditions that determine price, that the industry must come to grips with its problems.

The reasons why prices escaped control are by no means simple. Our industry was affected by depreciated currency competition in wood pulp and news print paper, by the generally unstable financial situation and by a host of other conditions that pressed down upon all business. But the chief reason was the lack of wisdom in the use of our production facilities. We did not balance our output with the demand. As the latter shrunk, we continually overproduced. And there is no more powerful method of breaking prices. The cause centered in the fact that manufacturers are human and are subject to the weakness of acquisitiveness. They all wanted to sell more than their share of the market.

Public Interest vs. Private Interest

There are two points of view in regard to business; the one is usually designated as the private interest, and the other the public interest. Economic history has much to do with the antagonism between these viewpoints. I think that it is safe to say that during this history the private interest has lost some of the prestige that came to it from the days of nobility and feudal control. The public interest on the other hand has become increasingly powerful as wage-earning consumers have become more articulate. In some instances the public interest has been carried to great extremes as in Soviet Russia. There is still and there is likely always to be antagonism between these interests; but in the more enlightened countries it is tending to be replaced by a new brand of coordination. We may be approaching an era of integration of government and industry.

Steeped as we are in the idea of individual independence, we will not gracefully submit to the new era, for it entails in its entirety vast changes in our conceptions. But it comes upon us at a time when the old methods have proven unworkable. At the moment many industries are deliberately seeking governmental control, willing to surrender the freedom of independent individualism. And the new Administration is considering right now the

* Address delivered April 22, 1933,, at the Joint Meeting of the Pennsylvania New Jersey Division of the American Pulp and Paper Mill Superintendents Association and the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry.

[1]Executive Secretary, American Paper and Pulp Association.

Perkins bill, so-called, by which industry will be controlled within certain limitations. It may be that whether we like it or not we will be controlled. All industry is today thinking of this possibility as it has never thought before.

We may not be born equal, nor may we be born to equal opportunity, but in any civilized country we are born to a right to earn our livelihood. That right means nothing if there is no work. And it is from this end that the problem is being approached by the Administration.

In the United States unemployment amounting to five million workers is not seriously felt, but when the figure mounts to ten million the effect is everywhere noticeable. Moreover, when unemployment approaches fifteen million something is likely to happen. It might be outright revolution; it might be a peaceful change in system. Whatever its method, the system undergoes some change. We are in that process today.

Programs Should Be Integrated

Fortunately, this vast problem is tending to be considered in its entirety rather than in a piecemeal fashion. To be sure specific legislation dealing with the extension of labor has been introduced into the Congress. Some bills have been acted upon by one or the other House. But before final adoption, broader bills are introduced that incorporate in a more extensive program the specific measures earlier considered. Whether this is designed or whether it is a matter of growth and development in thought does not matter. It is important that the parts of the program shall be integrated.

In considering the business situation from the point of view of employment, the Administration recognizes that it is a part of a much larger problem and that working hours cannot be limited and employment spread without giving industry means of carrying its share of the burden. The Perkins Bill, in a way a substitute to the Black Bill, or the Thirty Hour Bill, assumes that a chief difficulty with business is that many producers will not voluntarily submit to their share of a curtailment program when supply exceeds demand and that their non-compliance leads to overproduction and market demoralization. The Perkins Bill provides for policing industry to prevent just this thing.

Industry has had experience with voluntary price agreements and production control pacts. Such agreements are legal in most countries. Although illegal in the United States, they have been tried. In most instances they have not been successful, because one large producing unit may by refraining from participation destroy the effectiveness of the action of all others. Industry lacks the police power to enforce a proper sharing of responsibility.

Stabilization

It is appropriate at this time to consider some of the measures that must be reckoned with in the paper industry in bringing about a controlled stability so vital to the welfare of the industry and to the labor and capital employed in it. The paper industry is unique in many ways and the application of control measures will undoubtedly require considerable adjustment. It is likely, furthermore, that the industry itself can devise a more suitable system of control if it is properly approached. Is it not better to try this than to submit to cold legislative fiat of a blanket type? With this thought in mind the American Paper and Pulp Association is now considering plans of stabilization which may be submitted to the Government at an appropriate time.

The most important part of such a plan is the control mechanism and this in the paper industry raises many complicated questions. We are dealing not wholly with one industry; we are dealing in fact with many industries that shift and change as market conditions fluctuate. One group or mill may shift from its regular grade of manufacture to others, constituting a floating power element of large proportions.

Production may be controlled upon either a time or a capacity basis. Each has weaknesses, chiefly because of the industry's propensity to shift grades. Capacity limitations may mean that mills in standard lines will not be permitted to produce all of the paper that they could sell. In other instances the exact reverse might be true. The result is that the latter must shift their production. This type of control seems to encourage grade shifting and the use of sub-marginal equipment. This same condition exists in the time limitation type of control, but here the difficulties of determining exactly what capacity is in the different grades is not so great, and the policing would be less difficult.

In either event control of submarginal capacity is necessary. It is by no means equitable to force the most efficient producers to hold an umbrella over the least. In fact, the problem of submarginal production has always been difficult in the paper industry for few mills are eliminated permanently by competitive means. It is true that a mill may close down or that the management may be changed under adverse circumstances, but it is usually certain that the mill will eventually start up again, and perhaps under more favorable competitive conditions.

Control Cannot Be Left to Chance

The control of these units cannot be left to chance. After considerable thought on this subject, it appears to me that the only way that this can be accomplished is by purchase and deliberate scrapping by the stronger companies in the group. This is indeed an expensive method of control, but it may be far less expensive in the long run than the attempt at elimination by competition that we have witnessed during the recent past. There is an advantage in that the orders of the purchased company become the property of the purchasing mill, which should permit expansion of production by the purchaser. This means, obviously, that the system of industry control must be a flexible one, in order that the units that undertake the elimination of marginal and submarginal production may profit from their service to the industry.

Prices must be viewed from the points of view of the producer and of the consumer. The question immediately arises as to how the consumer will be protected if the producer is permitted a legalized control of production, a chief purpose of which is to increase prices. On the surface, it would appear that government representing the consumer should have considerable to say about the control of production and its influences upon prices.

Appalachian Coals Case

There is much in the Supreme Court's decision in the Appalachian Coals, Inc., case that bears upon this. Here two types of competition are recognized, that between individual companies and that between groups of companies. If I am not mistaken, the decision of the Court implies that in this instance, the competition between the individual companies could be eliminated without injury to the public interest and that the competition between the regional groups would be sufficient to maintain prices at reasonable levels for the consumer. If this is true, does it mean that the consumer can depend upon the group competition?

The application of this principle in the paper industry must be considered not only from the point of view of regional groups, but also from the point of view of grade groups. We have here a double form of group competition that might easily be sufficient to protect the consumers interests without arbitrary Governmental supervision of prices.

It is my impression that industry in general is not favorable to Governmental supervision of prices. On the other hand, as pointed out previously, industry is certainly more favorable now than ever before to Governmental assistance in production control and it is seeking an integration whereby production control may be policed. Is it possible to work out a compromise?

Control Measures

There are in the paper industry many conditions that require special consideration in the application of broad control measures. One of importance is the import situation. Plainly, it is in the national welfare to produce as much of our pulp and paper requirements within the country as possible. Our capabilities of producing are increasing rapidly as the technique of using new kinds of wood advances. How may we take advantage of these opportunities without creating a worse condition of overproduction than we now have?

The President is definitely committed to programs of foreign trade expansion and of reforestation. Here occurs a conflict in so far as the pulp and paper industry is concerned, for reforestation depends more upon the use of wood at the present time than upon its production. What American forestry needs is a much greater development of pulp manufacture because in this form of manufacture the costs of reforestation can be liquidated earlier than in any other type of wood-use. But a deliberate program of expansion cannot be undertaken if our foreign trade is also to be expanded.

At the same time, a greater stability could be secured if our paper production should fall entirely within the influence of the same political and economic conditions that govern our consumption. One of our greatest recent difficulties has been the fact that elements in our production have been subject to outside political and economic conditions. This sort of thing has occurred three times in the past two decades. It is a situation that can, I believe, be worked out along economic lines under a stable set of political conditions, for the new production that is responsible for the increase in the American Industry is powerful from the competitive point of view. The question hinges, it seems to me upon whether we can bring about a stability in the political economy of the world that will assure to us a high degree of stability in our own industry, or whether it is necessary to take steps that will encourage the growth of production in the United States, and possibly in Canada where the variations in business conditions are not so great as in European countries. The immediate importance of this problem may have become much less since the President withdrew gold support from American exchange, but precedence indicates that it will reoccur.

These and other problems are in the foreground of todays's thought in the industry. They need careful consideration in Washington. On the other hand, the paper industry cannot escape the influence of new legislation; we are vitally concerned with labor legislation, with production control measures and with the foreign trade situation. Is it not the proper time for our industry to work out an honest, broad stabilization policy and to take the necessary steps to have it incorporated in the, perhaps even broader system of industry control which the new Administration is considering?

Century of Progress in Paper

Great progress is reported at the Paper Foundation headquarters this week. The architect's plans and specifications were approved and these have been filed with A Century of Progress for their final approval. Work is already under way for the building of this complete Paper Exhibit by the contracting firm.

The two-room "House of Paper" is to be a big feature, interesting in hundreds of ways to the thousands of home owners and housewives who will visit the Paper Exhibit during five months beginning June 1st.

Adjoining, on the right of this feature, running 22 feet back from the aisle and 70 feet along it, will be arranged in dramatic display the actual making of paper, utilizing a special watermark prepared by Jos. J. Plank Company. Farther along will be the star attraction of the whole exhibit—a miniature Fourdrinier paper machine making a 4 inch sheet of paper. Through the fine cooperation of Sidney L. Willson, president of the American Writing Paper Company, the Paper Exhibit is assured this wonderful paper making machine. The making of paper is as interesting a process as could be found among the basic industries of the world, and with a Fourdrinier paper machine running every day the great paper exhibit in the Graphic Arts division of the General Exhibits building at A Century of Progress will be the mecca for the crowds.

Around these two attractions will be grouped an array of the latest testing machines and the individual cabinet displays of the manufacturers' exhibits.

These are but a part of the many interesting divisions of the Paper Exhibit that will tell the big story of the making of pulp and paper and its myriads of adaptations to human needs.

According to Phil A. Howard, president of The Paper Foundation, the rearranged plans, as approved, with the beautiful glass front cabinets running 60 feet along the main corridor, behind which are the main features, have enhanced their value 100 per cent and gives to those converters and manufacturers purchasing these units a marvelous opportunity for five months' publicity at less than $2.60 a day, all personnel included. "Never has the Paper Trade, both fine and paper specialty manufacturers, had such a real chance for constructive publicity at so reasonable a rate" said Mr. Howard.

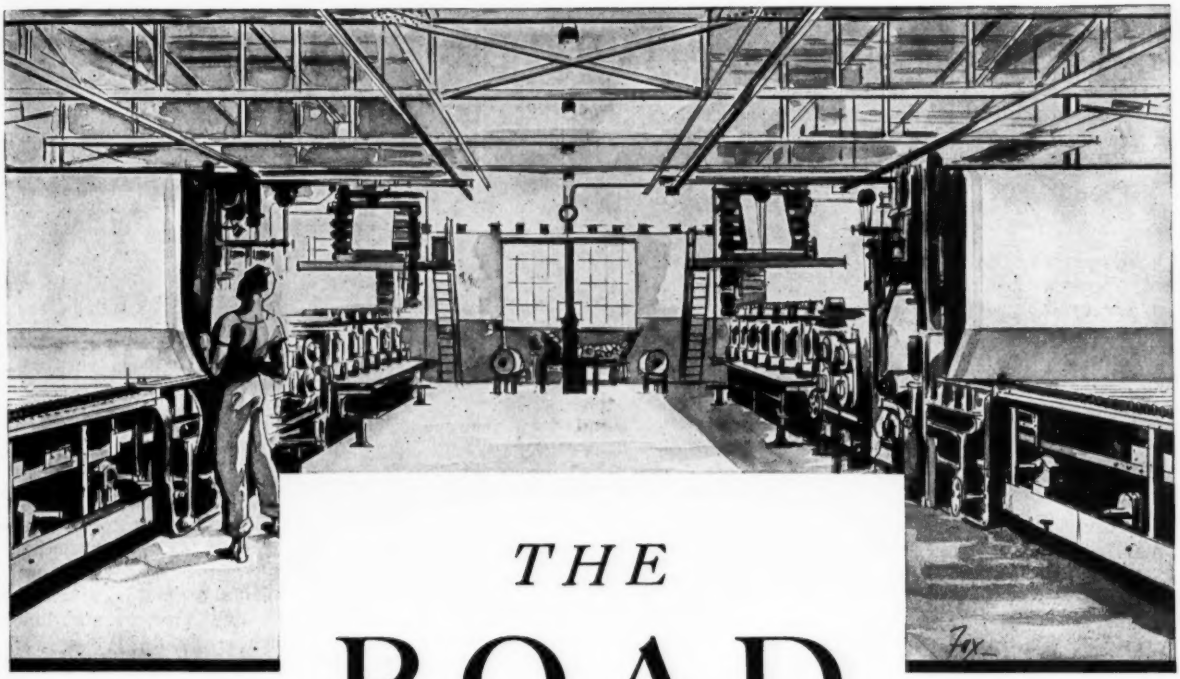
The large majority of these sixty cabinets have already been contracted for and those anticipating securing one should lose no time in getting their order in to the Paper Foundation headquarters in the Conway building, Chicago.

To Use Cornstalk Board

Cornstalk board will be used as the insulating material in the roof of the new post office building at Washington, D. C.

The Maizewood Products Corporation, Dubuque, Iowa, manufacturers of the cornstalk insulating board developed by the Engineering Experiment Station of Iowa State College, has been awarded a contract for the special board to be used for roof insulation on this building.

This cornstalk board has recently been used for roof insulation purposes at a number of points throughout the United States, including several of the World's Fair buildings at Chicago.



THE ROAD IS PLAINLY MARKED

Some mills are making a profit on business taken at today's figures. It is no accident that they have been the ones most aggressive in modernizing their machinery and equipment during the last two years.

Price increases will be retarded by the willingness of these companies to sell at prices below those at which many mills can manufacture at a profit. The road is plainly marked,—Modernize or lose your market

Here, at the Smith & Winchester plant, are the services and facilities you need. An engineering staff that has been responsible for many developments in fine paper making machinery will work with you on the redesign of your machines and submit estimates of the cost and time required to make the changes.

A modern plant equipped with the latest production tools and a large foundry and pattern shop provides a complete service for doing the work quickly at low cost under the supervision of our own engineers.

A discussion of your plans with an S & W engineer involves no obligation and all information will be held in confidence.

MAKERS: *Fourdriniers, cylinder and wet machines; paper bag machines; undercut trimmers; Rainstorm shower pipes; slitters and calenders; reels and winders; rolls (bronze and wood); Jordans and Jordan fillings; stuff and fan pumps; castings from our own or customers' patterns.*

The SMITH & WINCHESTER *Manufacturing Company*

1828

PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

Superintendents Arrange Attractive Program

The program has been practically completed for the Fourteenth Annual Convention of the American Pulp and Paper Mill Superintendents Association June 8, 9 and 10 at Green Bay, Wis.

Sports Program for Wednesday

While the Convention will not officially get under way until Thursday, June 8, a special Sports Program has been arranged for June 7 for the early arrivals.

This sports program includes golf and luncheon at the Oneida Golf and Riding Club and a dinner at the Beaumont Hotel with Past President Fred. C. Boyce as toastmaster. This dinner will be followed by the Auction of the Lost Derby and initiation of new members into the Ancient Order of Chinese Paper Makers.

Convention Called to Order Thursday

The Convention proper will be called to order Thursday morning by General Chairman Frank J. Timmerman. An address of welcome will be delivered by the Mayor of Green Bay, with a response by Vice President Herbert T. Randall.

President William H. Brydges will deliver his Annual Message, after which the following papers will be presented:

"Lubrication" by a representative of the Standard Oil Company of Indiana.

"Developments in Paper Mill Machinery" by a representative of the Black-Clawson Company.

There will be a luncheon at noon with Frank Vaughan of the Bay West Paper Company as toastmaster and Jim Flynn of the Great Northern Railroad as speaker.

Papers for Thursday Afternoon

During the afternoon session the following papers will be presented.

"The Use of Zinc Pigments in the Paper Industry" by Dr. Otto Kress, Technical Director of the Institute of Paper Chemistry and Howard M. Cyr of the New Jersey Zinc Company.

"White Water Utilization" by C. N. Baker, Engineer of the American Paper and Pulp Association.

"Anticipating Maintenance Expense by Proper Inspection," by E. E. Berry, vice president of the Beloit Iron Works.

"Safety" by Mr. Waite of the Travelers Insurance Company.

"Constant Tension Regulator On Reels and Unwinding Stands" by R. H. Smith of the Reliance Electric and Engineering Company.

"New and Future Uses of Paper" by E. T. A. Coughlin, past president of the Superintendents Association, of Chicago, Ill.

"Windowless Paper Mill" by A. E. Montgomery, J. O. Ross Engineering Corporation.

"Benefits of Chromium to the Paper Industry," by a representative of the Chromium Corporation of America.

Ample time will be provided for visiting the exhibits of paper making supplies and equipment.

Dinner Thursday Evening

There will be a dinner Thursday evening at the Beaumont Hotel with C. E. Jackson of the Consolidated Water Power and Paper Company as toastmaster.

The speaker of the evening will be J. M. Conway, president and general manager of the Hoberg Paper and Fibre Company, whose subject will be "Your Duties and Mine."

A Paper by a representative of the Carborundum Company will be presented Friday morning and the remainder of the day will be devoted to a discussion of the various papers presented the day before.

Judson G. Rosebush will be the speaker at the luncheon Thursday and in the evening the banquet will be featured by an address delivered by Jimmy Gheen, paper maker from Ireland.

The Past President's jewel will be presented as will be The Paper Mill Trophy.

Saturday will be devoted to visits to neighboring paper mills and to the Paper Institute at Appleton.

Special Program for Ladies

The special program for the ladies has been arranged under the direction of Mrs. A. E. Cofrin, providing for a luncheon and style show Wednesday, with dinner at Alaska Lakes. A visit to places of historical interest in Green Bay will occupy Thursday morning and luncheon at the Northland Hotel will be followed by a Bridge. Mrs. A. E. Winters and Mrs. J. W. McCormick will give instructions on Contract.

Dinner at the Y.M.C.A. will be followed by a theatre party.

The ladies will visit the cherry orchards and state parks in Door County Friday morning with stops at interesting points en route. Luncheon will be served at Maxwellton Braes, Baileys Harbor. The ladies will attend the Annual Banquet Friday evening at the Northland Hotel.

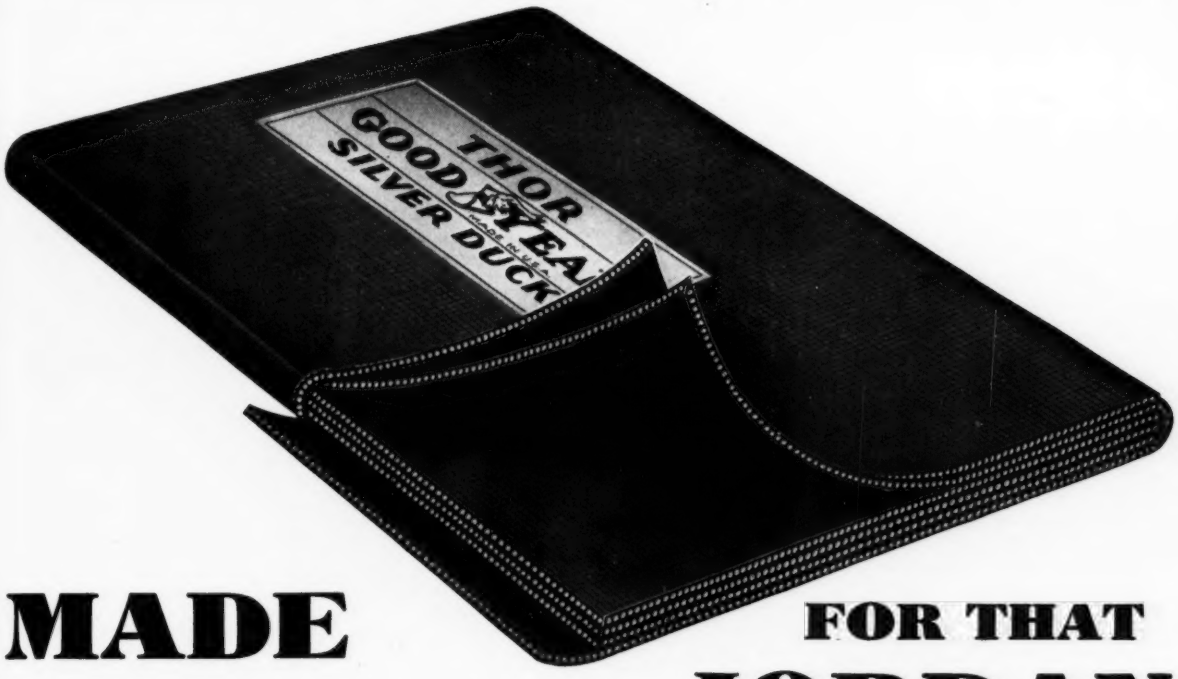
Wood Pulp Rates from Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 29, 1933—The Maritime Association of the Boston Chamber of Commerce has joined with the city of Boston and the Boston Port Authority in filing with the Interstate Commerce Commission a formal petition for the suspension of increased rates on woodpulp, both foreign and intercoastal, from Boston to central territory and points in Wisconsin.

The railroad tariffs showing these increased rates had been filed with the commission to take effect May 15. The opponents declare that the increased rates would destroy the parity of rail rates on this traffic that has prevailed between the principal North Atlantic ports for a long period, and would impose upon Boston a rate differentially higher than the other ports.

Woodpulp is one of the principal items handled through the port of Boston. The tonnage at this port increased from 40,000 tons in 1920 to nearly 200,000 tons last year. The various ports are engaged in keen competition to obtain a reasonable share of the imported woodpulp destined for central territory. Being on the same basis as Portland and Baltimore, Boston has not been deprived of equality of opportunity. If, however, the Boston pulp were to be penalized and if the rates from Boston docks were 40 cents to $1.60 per ton higher than competing ports, depending on destination, Boston would not receive the benefit of further importations of woodpulp intended for delivery in central territory and Wisconsin, and the interests of the port would be seriously damaged.



MADE TO ORDER FOR THAT JORDAN DRIVE

LOOK at the way this belt is built. No wonder it sets new records for longer belt life and lower belt costs on Jordans, beaters, chippers, pumps or cone-pulleys!

It has no center seam to open under flexing strains.

It has edges envelope-protected against fray.

It has a body of heavy silver duck, strong at the fasteners, cushioned and buttressed in toughest Goodyear Rubber.

Remember its name—Goodyear THOR Belt, seamless*. Scientifically constructed for paper mill duty, and accurately specified to your particular operating conditions by the G.T.M. — Goodyear Technical Man.

NEW AND EXCLUSIVE GOODYEAR DEVELOPMENTS FOR PAPER MILL SERVICE

Goodyear Style M Paper Machine Hose (Tube VULCANIZED to Prevent Flaking)

Goodyear Rubber Rollers

Goodyear COMPASS (Cord) Endless Transmission Belt

You will probably save considerable money by having the G.T.M. go over your belt and hose requirements with your operating officials.

A line to Goodyear, Akron, Ohio, or Los Angeles, California, or a call to your nearest Goodyear Mechanical Rubber Goods Distributor will bring him to your mill.

*Goodyear THOR Belting, seamless, is made in widths up to and including 16"—THOR quality of special construction is available for larger sizes.

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS • MOLDED GOODS • HOSE • PACKING

New York Trade Jottings

Waterfalls Paper Mills announce the removal of their New York offices to 386 Fourth Avenue, at the corner of 27th street. The telephone numbers are Caledonia 5-3242-3-4-5.

* * *

The British Chamber of Commerce in the United States of America announces the removal of its offices, on and after May 1, from 25 Broadway to the British Empire Building, 620 Fifth Avenue, New York.

* * *

The Borregard Company, Inc., exclusive sales agents for the highest grades of Scandinavian pulps, announce the removal of their New York offices to 386 Fourth Avenue, at the corner of 27th street. The telephone numbers are Caledonia 5-3242-3-4-5.

* * *

The Stein-Brill Corporation, machinery and equipment dealers, on May 1 moved their offices from 25 Church street to 183 Varick street, New York, where they have established a new warehouse, and will combine their offices and warehouse under one building.

* * *

H. H. Heinrich, Inc., of 200 Varick street, New York, who handle the sales of Matador Bag Machines, Aniline Printing Presses, rubber plate equipment, and other similar lines, have appointed the Harry W. Brintnall Company, of San Francisco, Los Angeles and Seattle, as their west coast representatives.

* * *

Thomas J. Burke, executive secretary of the Sulphite Institute, with headquarters at 370 Lexington Avenue, New York, is atetnding the meeting of the American Trade Association Executives, of which he is a member, at Washington, D. C., this week, in connection with the Spring Meeting of the Chamber of Commerce.

* * *

Christian Steidinger was the guest speaker at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, held at the Hotel Roosevelt, New York, on Monday last. Mr. Steidinger discussed "Paper From the Standpoint of the Practical Printer" in an interesting manner. There was an excellent attendance.

Camas Post Says Paper Mills Will Benefit

CAMAS, Wash., April 29, 1933—The paper and pulp industry will be directly benefited by depreciation of the American dollar as a result of the new "silver standard," in the opinion of L. E. Thorpe, editor of the *Camas Post,* local weekly newspaper.

"Foreign pulp and paper producers who have been able during the last 18 months to take advantage of a 30 per cent premium on the American dollar and flood American pulp markets, will lose this advantage and the change will mean more business for American mills and more jobs for American citizens," The *Post* declared. "Camas vitally interested in paper-making, will be among the first to benefit."

Polish Paper Syndicate Prices

WASHINGTON, D. C., April 19, 1933—American Consul Perkins, at Warsaw states that the new price list of the Polish Paper Syndicate became effective on March 1, according to which the price of rotary news print dropped 8 per cent and other kinds of paper from 5 to 12 per cent.

C. B. Pride Dead

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 1, 1933—C. B. Pride, of Tomahawk, Wis., who had been identified with the paper industry since the early nineties, died April 27 at the Illinois Masonic Hospital, Chicago, where he had been confined for some time with illness. The body was conveyed to his boyhood home at Appleton, Wis., for burial. He is survived by his widow and three sons, B. A., H. A. and R. C. Pride.

Mr. Pride was president since 1895 of the Tomahawk Pulp and Paper Company, and was largely responsible for its successful operation over a long period of years. The loss of its principal distributing connection in 1928 caused the company to go into receivership. The mill was changed over to other grades of paper but could not withstand the condition of over-production and price cutting of the times and was forced into bankruptcy in 1929. The mill had been idle since that time.

In 1895 Mr. Pride moved to Tomahawk and joined the directorate of the Tomahawk Pulp and Paper Company. His brother, A. M. Pride, had built the first unit of the paper mill in company with the A. M. Newton & Sons Company, of Sparta, Wis., in 1890. C. B. Pride purchased a large interest when he joined the company and the Newton interests retired. He then became president, A. M. Pride was the treasurer, and William Eibel, secretary.

The company manufactured a very high grade of catalog book paper and because of its light weight and complete opacity, it became a leader in the field. Mail order houses took all the output and the increasing demand caused construction of No. 2 mill in 1904. The company also built Kings Dam on the Wisconsin River with 3,000 h.p. in 1911 and also what was known as the Kings Dam pulp mill. For years, the company's entire output of catalog paper was taken by Montgomery Ward & Co.

Being by profession an engineer who had built large mills in the United States and Canada, Mr. Pride's success led him to form a new company in 1920 which erected a $3,500,000 mill at Tomahawk intending to use it for news print. The mill started operating in 1921. Later it was sold to a new company formed by the late Olii Bache-Wiig, of Mosinee, Wis., who made extensive alterations so as to convert it into a sulphate kraft plant. The new owners became the Tomahawk Kraft Paper Company, present operators of the kraft mill.

Mr. Pride was always noted for his benefactions, his liberality with his employees, and his willingness to help any who needed it. When the Tomahawk Pulp and Paper Company was declared bankrupt, he paid all wages and salaries due employees from his personal funds. It is reported that his personal fortune has been practically exhausted in his efforts to re-acquire the paper and pulp mill and place it in operation again.

An elaborate home was maintained by Mr. Pride on an island in the Wisconsin River near the city of Tomahawk. He made many gifts to the city, including what is known as "Pride Athletic Park."

New Mill Manager for Dalhousie

L. S. Henry, formerly mill manager of the Corner Brook Mill of the International Power and Paper Company of Newfoundland, Ltd., has been appointed mill manager of the Dalhousie paper mill of the New Brunswick International Paper Company, succeeding G. D. Bearce, who has been mill manager for several years. Mr. Henry has been succeeded at the Corner Brook mill by K. O. Elderkin, formerly assistant manager.

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CONTROLLED INFLATION

The highlight last week in the intense drama which is being enacted at Washington was the passage by the Senate, 64 to 20, of the Farm Relief bill with the inflationary amendment. Passage in the Senate was expected but not so overwhelmingly. The measure beyond any doubt will now rapidly become a law. In its present form, it gives to the President one of the most extraordinary grants of authority ever conferred in one bill by a legislative body.

It clothes him with full power to set processing taxes upon numerous basic farm commodities.

It authorizes him to cut down the gold content of the dollar up to a maximum of 50 per cent.

It gives him power to create in addition to this an inflation, the size of which no two people agree upon, but which at its minimum is set at $3,000,000,000 and at its maximum $20,000,000,000.

It confers upon him the right to put into effect an elaborate plan of refinancing farm mortgages up to $2,000,000,000.

It grants authority for unlimited coinage of silver at any ratio with gold that he may deem wise, and permits him to accept up to $200,000,000 in silver at a price not exceeding fifty cents an ounce in payment of foreign debts, and to issue currency against this silver.

It enables him to retire interest-bearing United States bonds up to $3,000,000,000 with new paper money currency, which, however, must be retired at the rate of 4 per cent a year.

Just how far the President will use these great powers remains to be seen. Some bankers, however, see a chance that he may get the desired inflation of commodity prices by the psychological effect of all these preliminary preparations through increased purchase of raw materials and manufactured products in anticipation of an expected price advance.

The President and those close to him firmly believe, in spite of some opinion to the contrary, that such inflation as may be applied can be controlled. This opinion was expressed last week by Lewis W. Douglas, Director of the Budget, who said, "There can be no recovery if we have a fear of going forward. Here is your government demonstrating complete control over its own affairs. Is it not an assurance against budgetary inflation? The fact that the government can control its fiscal policies shows that it can control inflation."

After the decisive action in the Senate, markets boomed and commodity prices pretty generally appreciated. Under the caption "Business Gaining on Broad Front," the New York Times reported an improvement in trade generally, saying:

"Increasing confidence and activity were evident last week in two major industries. In the steel trade, operations rose to 29 per cent of capacity, comparing with 25 per cent the week before and with 14 per cent at the beginning of the month, and while steel operations were rising nearly 100 per cent, automobile production advanced 50 per cent. These changes accompanied steady gains made in retail trade since the banking holiday.

"Prices have stiffened in virtually all lines. Advance buying by merchants and manufacturers of commodities appears to have displaced to some degree the wary hand-to-mouth dealing in evidence for many months."

The overwhelming victory of the administration in the Senate last week means that the President is likely to remain in control of Congress. After granting him such great powers, other things that he is likely to ask will undoubtedly be considered of minor importance. This means that the President will be able to carry out his program of remedial measures completely and, what is of more importance, rapidly. This will allow an early adjournment of Congress, after which business may adjust itself to conditions without any apprehension that additional laws of an unsettling influence will be passed.

It is true that we are entering on untried paths, but already the opinion is widespread that the long cruel trend of falling prices has been halted and that the persistent stagnation of the past few years will soon be succeeded by more satisfactory business activity.

PAPER MILL EMPLOYMENT

The March employment figure in the paper and pulp industry was 72.5 compared with 72.5 for February and 77.8 for March of last year taking 1926 at 100 according to the Bureau of Labor Statistics, Department of Labor. The payroll index number for March was 45.2 compared with 46.5 for February and 61 for March of last year.

In the paper box industry the March employment index number was 68.9 compared with 68.3 for February and 73.3 for March of last year while the payroll number for March was 51.4 compared with 53.7 for February and 65.9 for March of last year.

International Paper & Power Co. Meets

BOSTON, MASS., April 26, 1933.—Shareholders of International Paper and Power Company at the annual meeting held here today re-elected the following directors: Walter C. Baylies, George Bishop, Malcolm G. Chace, William Chamberlain, Frank D. Comerford, F. Eberstadt, Archibald R. Graustein, William N. Hurlbut, F. L. Higginson, David T. Layman, Jr., John R. Macomber, Rudolf Pagenstecher, Gifford K. Simonds, A. A. Tilney, and Albert H. Wiggin.

President Graustein in presenting the financial report for 1932, which showed a net loss of $8,757,728, declined to make any predictions for 1933. In answer to questions of several shareholders, he said that neither government officials nor business leaders know whether the bottom of the depression has been reached and that prophecy under such circumstances would be futile.

One of the substantial accomplishments of 1932, he said, was a reduction in the bank debt of the company and its subsidiaries, due in large part to the refunding operations of New England Power Association, which during the year marketed $18,000,000 in 20-year bonds of Connecticut River Power Company, and $9,000,000 in 5-year notes of North Boston Lighting Properties. The ability of New England Power Association to sell these securities in the disturbed business conditions of 1932, he said, was a tribute to the management of that company.

Summarizing current conditions, Mr. Graustein said: "On the credit side of the ledger we have a number of favorable factors. First is the recognized high efficiency of our paper mills which continue to maintain very low production costs. Then there is the aggressiveness of our sales force which has enabled us to obtain our full share, based on capacity, of such demands as exist. A third favorable factor is that our power properties are located for the most part in territories where industry has had more than average stability during the depression and where business will recover rapidly when the turn comes.

"On the opposite side of the ledger, however, are factors which we cannot afford to ignore. The first of these is political uncertainty, with the threats of unfair and discriminatory legislation against privately-owned utilities. The pending tax bill in Washington which would impose a 3 per cent tax on gross earnings of electric companies, is a case in point. If this legislation becomes law a precedent of extraordinary danger to the electric industry will have been established. Coming at a time when utility earnings have already suffered from the cumulative effects of the depression and from rate reductions, this proposed 3 per cent tax would have a ruinous effect on many companies.

"A second adverse factor is the chaotic condition in the news print industry, in which competition of the unfairest sort has forced prices down to ridiculously low levels. This is a situation which can only be cured by a constructive program in which the entire industry will cooperate. The hope of price stabilization lies in the future attitude of Canadian financial interests, and unless there is cooperation among them, no permanent improvement, or even perhaps temporary improvement, can be accomplished by the rest of the industry."

Shareholders of International Hydro-Electric System, which also met here to-day with President Graustein presiding, reelected the following directors: Arthur E. Childs, Frank D. Comerford, Murray W. Dodge, Victor M. Drury, G. Gordon Gale, Aime Geoffrion, Louis C. Gerry, Archibald R. Graustein, J. Howard Leman, Ralph Lowell, Samuel C. Moore, Andrew J. Peters, Howard P. Robinson, Harrison R. Weaver, Robert S. Weeks, Arthur F. White, and Henry A. Wyman.

Ross Corp. To Handle Delthirna

Arrangements were recently completed whereby the J. O. Ross Engineering Corporation will have the exclusive sales rights for the Delthirna Sizing Process throughout the United States.

The Delthirna System is well known among foreign paper mills and since its introduction in the United States it has been adopted by 30 paper mills.

The new selling arrangement is of real importance to the paper industry since it makes available the experience and facilities which have been so long associated with the sale of other Ross Engineering Corporation equipment.

The Ross Corporation will have the cooperation of C. H. Kent, formerly of Mansfield, Bolton & Kent, Inc., and now associated with the American Delthirna Corporation, having supervision of all the Delthirna activities.

Complete information and service in connection with the Delthirna System will henceforth be available through each of the J. O. Ross Engineering Corporation offices located in New York, Chicago and Portland, Ore.

Favors Four Day Week

HOLYOKE, Mass., May 2, 1933—Morris C. Dobrow, assistant secretary of the Writing Paper Manufacturers Association told members of the Connecticut Valley Division of the Cost Department of the American Paper and Pulp Association at their April meeting last Wednesday night that a four day week would be the salvation of the industry. Mr. Dobrow presented a number of charts which portrayed the trend of the industry during the past ten years. He declared that this research had convinced him that the most logical move for the industry would be to adopt the four-day week. It would give greater assurance to the manufacturer. It would also assure many workers steady work for four days a week whereas now their income is uncertain.

D. J. Murray Mfg. Co. Optimistic

At a recent meeting of the board of directors of the D. J. Murray Manufacturing Company, Wausau, Wis., the following men were elected officers: F. C. Boyce, President; M. P. McCullough, vice-president; J. S. Alexander, treasurer; C. E. Staky, secretary.

The above named together with: D. C. Everest, Geo. E. Foster, Grover Keeth, J. F. Ross, W. L. Edmonds constitute the board of directors.

Activities of the company are being carried on along lines of new developments, etc. and C. E. Staky, secretary and general manager, is very optimistic for improvements in general business conditions which should be reflected in the paper industry.

Price of Fourdrinier Wires Reduced

Announcement has just been made by the manufacturers of Fourdrinier wires that the price of same has been reduced 5 cts. per square foot. This will enable the wire manufacturers to more favorably compete with foreign made wires.

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Number 10 • Number 19 • Number 13

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

The National Research Council, 21st and B Street, Washington, D. C., through Dr. Clarence J. West, extends the courtesy of its photostat service to members of the Technical Association of the Pulp and Paper Industry. Owing to a limitation of personnel and time, this service cannot be extended to non-members.

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Payment should be made upon receipt of invoice.

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Machinery

Process for Coloring Paper. Société Anonyme des Anciens Etablissements Victor Weibel. Fr. pat. 722,743.—Color solution is applied to the surface of the paper by means of the lower of two superposed rolls rotating in opposite directions, and which can be adjusted relatively to each other and relatively to the sheet of paper. The color is supplied continuously to a trough formed by the lower roll and a coacting doctor blade.—A.P.-C.

Proportioning and Metering Apparatus. Harold D. Wells. U. S. pat. 1,862,643 (June 14, 1932).—Each one of the materials to be metered (groundwood, sulphite, size, etc.) is admitted in constant quantity into a separate chamber. In each chamber is a proportioning and metering device consisting of a rotor having buckets, preferably internal, for the ingredients, and a trough into which some or all of the contents of the buckets are discharged for delivery to the mixing chamber, the trough and the rotor being relatively axially adjustable to accurately regulate the proportion of the liquid elevated by the rotor that will be discharged into the trough.—A.P.-C.

Screw Presses in the Pulp and Paper Industry. Curt Weil. Paper Industry 14:503-507 (Oct., 1932).—A description of several types of screw presses in use in Europe with a discussion of their practical advantages in the industry.—A.P.-C.

Diffuser for Wood Pulp. Antone Gustin assignor to Continental Paper and Bag Corp. U. S. pat. 1,860,836 (May 31, 1932).—The diffuser comprises a lateral drainage zone in addition to the bottom drainage zone, preferably disposed near the bottom of the diffuser and extending vertically along the side wall of the diffuser for a fraction of the height of the tank. The side drainage zone is formed by mounting a lateral filter plate against the lower portion of the side wall of the tank, the filter plate being constructed to withstand the pressure existing within the diffuser and being spaced from the side wall so as to provide a substantially annular drainage chamber.—A.P.-C.

Filter for De-Inked Stock. Bigelow Crocker. U. S. pat. 1,861,381 (May 31, 1932).—By using a filter such as described in Wright's U. S. pat. 1,472,574, of October 30, 1923, and applying suction after a mat of de-inked fibers has been formed, particles of carbon, kaolin and other impurities are drawn through the fibers and removed with a minimum loss of fine fibers in the white water.—A.P.-C.

Rubber Covered Rolls. W. E. Brown. Paper Mill 55, No. 29:4, 16 (July 16, 1932).—A brief discussion of the handling and care of rubber covered rolls, dealing with crown, grinding and density of the rubber.—A.P.-C.

Hydraulic Felt Conditions. John L. Harris. U. S. pat. 1,859,508 (May 24, 1932).—The conditioner is supported on a frame mounted transversely of the paper machine and consists of a large pipe having two longitudinal slots at its opposite sides. A longitudinal pipe of smaller diameter is mounted inside the larger one, being supported at each end by short lengths of pipe on which are journalled rollers fitting in the slots of the large pipe. One of the small pipes at each end is connected to a supply of hot water and the other to a downwardly directed spray nozzle, and the whole apparatus is slowly moved back and forth across the width of the felt.—A.P.-C.

Process and Apparatus for Preparing Webs from Fibrous Materials. Einar F. Sundström and Karl E. Stéen. U. S. Pat. 1,870,971 (Aug. 9, 1932).—The process consists in removing water from, or drying, a web of fibrous pulp by subjecting one side to a higher pressure than the other as it is passing through a closed chamber. The web may be formed by pumping stock under relatively high pressure into a chamber which it completely fills, part of the wall of the chamber being formed by a rotating cylinder mold on which the fibers are deposited. Alternatively, the chamber may be only partly filled with the stock, the remainder of the chamber being filled with hot or cold air or gas under pressure.—A.P.-C.

Chromium-Nickel-Iron Castings from Sulphite Service*

By G. L. Cox[1] and F. L. LaQue[2]

Abstract

A report to the Materials of Construction Committee on the examination of six chromium-nickel-iron castings taken from sulphite pulping service and the application of certain metallurgical considerations to their behavior.

The use of chromium-nickel-iron alloys for handling sulphite liquors has increased steadily during the past few years. In general, these alloys have been very satisfactory. However, in the early stages of the development a few failures occurred. These failures, especially in the case of castings, attracted the attention of the industry, since they were in such contrast to the generally satisfactory behavior of castings and of wrought material used along with them. *(1)* As a result the Materials of Construction Committee of the Technical Association of the Pulp and Paper Industry became interested in the problem, since it was engaged in drawing up a specification for such castings. A few castings that had failed in service were secured for examination. It should be borne in mind that this report constitutes observations on the limited number of castings available rather than a detailed study of the various factors that might influence the performance of such castings in service.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Materials of Construction Committee.
[1] Research Laboratory, International Nickel Company, Inc. Bayonne, N. J.
[2] Development and Research Dept., International Nickel Company, 67 Wall Street, New York, N. Y., and member TAPPI Materials of Construction Committee.

FIG. 1-a
Bonnet from relief valve after 2½ years' service.

FIG. 2-a
Corroded valve disc from relief valve.

The committee, of course, had no facilities for making a metallurgical examination of these castings. Therefore, it enlisted the cooperation of the Republic Steel Corporation for the chemical analyses, and of the International Nickel Company for the metallographic study. For convenience of presentation, the result of both studies are contained in this report, which constitutes an "autopsy" of the castings submitted.

Consideration of this subject should naturally include a review of what has already been published on alloys of the type to be discussed. Instead of presenting an exhaustive review of the literature, the writers have taken the somewhat unusual course of compiling an itemized summary of the findings of several investigators along the lines of a similar summary prepared by the committee on a previous occasion. *(2)* In doing this they felt that the paper industry was more interested in general principles than in metallurgical details. They realize that such a summary does not give proper credit to individual sources of information, and consequently crave the indulgence of the authors concerned. These original sources are included in the bibliography appended to this report.

Information from the Literature

1. A certain minimum amount of chromium and nickel are essential to insure adequate resistance to corrosion.
2. Only the chromium and nickel in solid solution with the iron are effective in contributing to corrosion resistance. Combined with carbon in the form of precipitated carbides, they do not contribute to corrosion resistance of the alloy as a whole, although the carbides themselves are very resistant to attack in many environments.
3. The solubility of carbon in these chromium-nickel-iron alloys decreases as the temperature falls from the solidus and has been reported to be not more than 0.04 per cent at 1100 deg. F. Below 1100 deg.

FIG. 3-a
Fragment from relief strainer after about 2 years' service.

F. the solubility is not accurately known. In the temperature range from about 1600 to 1000 deg. F. excess carbon is precipitated from solution and appears usually in the form of carbides at the grain boundaries. In metal which has been previously stressed severely, carbides may appear along slip planes within the grains as well. Stresses that influence carbon precipitation may form during cooling of castings. At higher temperatures precipitated carbon is redissolved. It has been shown that the temperature at which carbon is redissolved, as it affects the grain size, and consequently the distribution of the intergranular constituent influences the corrosion resistance of alloys subsequently held within the temperature range where carbon precipitation occurs.

It has been noticed that a phase change from austenite to ferrite may accompany precipitation of carbon as carbide. Whether the phase change is a cause, or result, of the precipitation of carbon has not been determined definitely. The fact of two phases being present may also have a bearing on the behavior of the alloy by reason of electrolytic effects. Prevention of a phase change is achieved by a slight increase in the nickel content of the alloy.

4. The chromium content of precipitated carbides is said to be as much as 90 per cent. Stated another way, the precipitation of each 1 per cent carbon is said to take out of solid solution up to 19 per cent chromium.
5. The rate of diffusion of chromium in the temperature range of carbon precipitation is thought to be

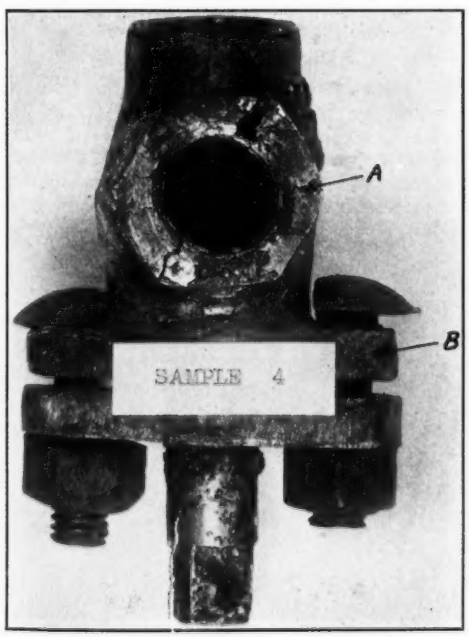

FIG. 4-a
Three-quarter inch plug cock after 7 months' service.

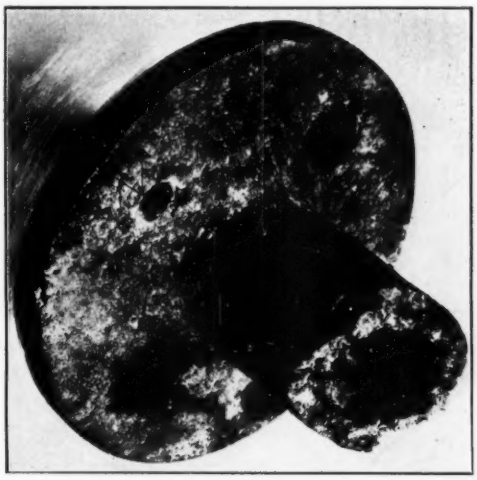

FIG. 5-a
Portion of side relief strainer.

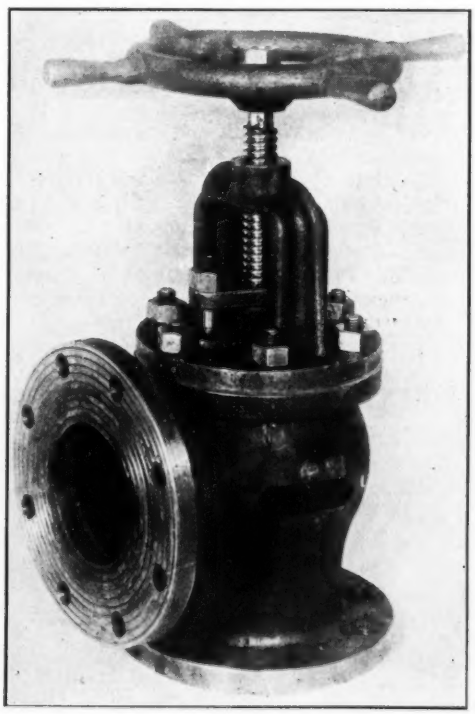

FIG. 6-a
A four-inch valve after 2 years' service as a Mitscherlich blow-off valve. This valve is still in service.

FIG. 1-b
Section of corroded portion of Sample 1, Fig. 1-a, at point marked "A". Etched with Aqua Regia. x 100.

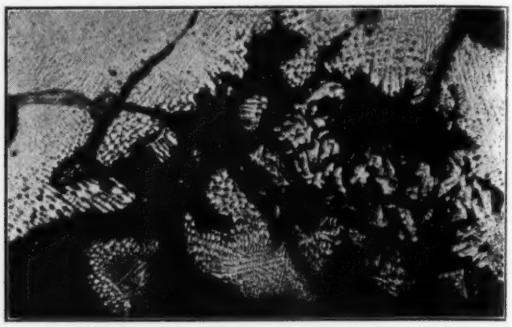

FIG. 3-b
Section of corroded portion of Sample 3, Fig. 3-a, at point marked "A". Etched with Aqua Regia. x 100.

considerably less than that of carbon. This implies that the chromium contained in the carbides comes from a considerably smaller volume of metal than that from which the carbon is taken.

6. From 3, 4 and 5, a possible explanation of intercrystalline corrosion of this type of alloy has been suggested. It is based on the belief that the precipitation of carbon, as carbide, is accompanied by local chromium impoverishment of the metal immediately adjacent to the precipitated carbides. This in turn is said to result in sufficient impairment of corrosion resistance to bring about severe attack (usually intercrystalline) of the impoverished zones by solutions to which the alloy may subsequently be exposed. It should be pointed out, however, that this explanation is not unanimously accepted. However, since it provides a working hypothesis which has enabled the development of suitable and positive means of avoiding such difficulties, it appears to be useful.
7. Based on 3, 4 and 5, several means of eliminating corrosion associated with the presence of precipitated carbides have been suggested as:
   (a) Avoiding holding the metal for any appreciable period within the range from 1600 to 1000 deg. F. This is, of course, not practical in connection with castings which must cool slowly in molds.
   (b) Where it is impractical to avoid cooling or heating conditions which may result in the precipitation of carbon, the carbides may be redissolved. This can be accomplished by reheating to a suitable temperature, followed by rapid cooling through the temperature range noted above, as by quenching in a proper medium.
   (c) By lowering the carbon content of the alloy sufficiently it is claimed that the extent of carbide precipitation may be reduced to a point where it will not result in serious corrosion in many environments. As the carbon content is lowered, the fluidity of the molten alloy decreases and consequently casting difficulties increase. This fact tends to limit the applicability of this procedure.
   (d) Raising the chromium and nickel contents above the nominal 18-8 proportion may be expected to provide sufficient reserve against depletion to allow the precipitation of carbon to occur without impairment of corrosion resistance. Another possible effect of the extra alloy content may be to decrease the tendency for harmful precipitation to occur or slow down its rate.
   (e) The use of special alloying elements which unite readily with carbon and thus reduce the chromium content of the carbides, stabilize the carbon in solution, slow down its rate of diffusion or bring about a more or less controlled and harmless precipitation of carbon, as carbides, away from the grain boundaries. Elements suggested, or being used, for these purposes include silicon, molybdenum, tungsten, titanium and vanadium.

History of Specimens

The specimen castings for examination were procured by the committee from interested members of the association and turned over to the authors for study. Six castings were received, five of which had failed, while the sixth was removed from service in perfect condition for comparative purposes. Arrangements have been made to obtain from successful service a seventh casting, more closely approximating the chemical analyses of those that

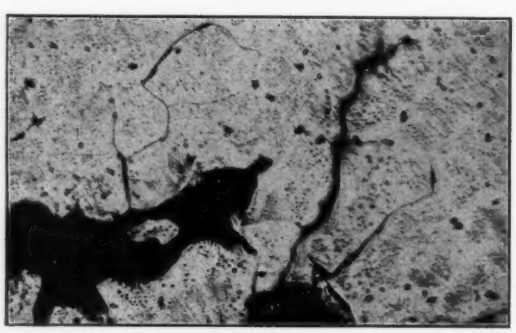

FIG. 2-b
Section of corroded portion of sample 2, Fig. 2-a, at point marked "A". Etched with Aqua Regia. x 100.

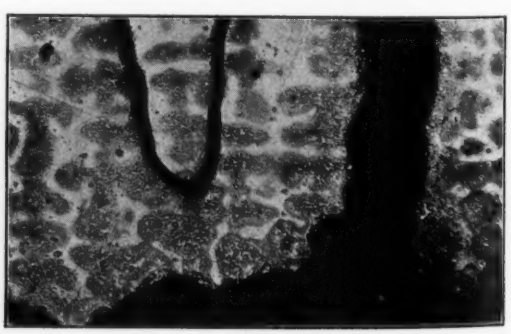

FIG. 4-b
Section of corroded portion of Sample 4, Fig. 4-a, at point marked "A". Etched with Aqua Regia. x 100.

had failed. This casting was not received in time to enable its examination to be included in this report.

The appearances of these castings as received are illustrated in Figs. 1a, 2a, 3a, 4a, 5a, 6a, and 6b. Figures 1a to 5a inclusive represent castings that failed. Figure 6a represents a large valve that did not fail, and 6b the disc from this valve. This disc was furnished for study and a new disc supplied for the valve which was put back into service. The scattered discoloration that can be observed in Figure 6b was not accompanied by intergranular penetration.

The service histories and chemical analyses of the castings are given in Table I.

It will be seen from Table I that every casting that failed was of low alloy content, being generally deficient in chromium in relation to carbon. Specimen No. 2 had an unusually high carbon content and an abnormally low chromium content.

The number of samples submitted for study was not sufficient for the determination of any definite relationship between chemical composition and performance in service. However, the authors understand that the Materials

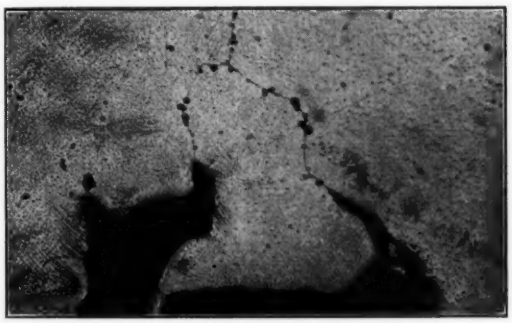

FIG. 5-b
Section of corroded portion of Sample 5, Fig. 5-a, at point marked "A". Etched with Aqua Regia. x 100.

of Construction Committee is currently engaged in drawing up a specification for castings of this type of alloy which will indicate the proper limits for the significant elements, viz.: nickel, chromium and carbon. Table I should be compared with the chemical composition required by this specification when it becomes available.

Metallographic Examination of the Castings

The microstructures of the five castings that failed are shown by the photomicrographs, Figs. 1b and 1c, 2b and 2c, 3b and 3c, 4b and 4c, and 5b and 5c. Sections for

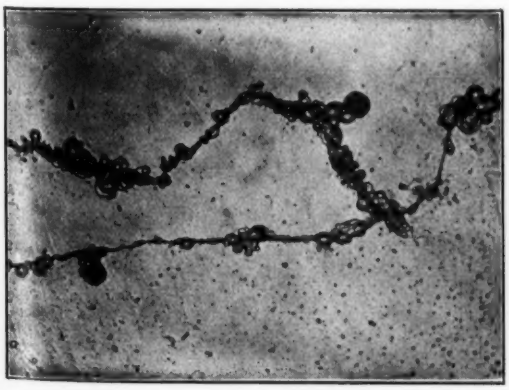

FIG. 1-c
Section of Sample 1, Fig. 1-a, at point marked "B" to which corrosion had not penetrated. Etched with Aqua Regia. x 1000.

FIG. 6-b
Disc from valve shown in Fig. 6-a after 2 years' service. Slight discoloration in spots, but no intergranular penetration.

microscopic study were taken from points indicated in the photographs of the castings. It is interesting to note that in every case a separate constituent is present at the grain boundaries and that the corrosion which occurred followed the path of this intergranular material. This intergranular constituent is presumably carbide.

Fig. 1b shows most clearly the intergranular nature of the corrosion. It will be noted that the grains themselves were apparently unattacked by the sulphite liquor.

Fig. 1c shows a copious precipitation of intercrystalline

TABLE I

SERVICE HISTORY AND CHEMICAL ANALYSES OF CASTINGS

Sample No.	Shown in Fig. No.	Chemical Analysis C	Cr	Ni	Mo	Service History
1	1a	0.18	17.1	8.2	..	Bonnet on relief value on sulphite digester used 2¼ years.
2	2a	0.50	16.2	8.0	..	Valve disc from sulphite relief valve used for unknown period.
3	3a	0.17	17.4	8.3	2.7	Fragment from side relief strainer used for about 2 years in sulphite digester.
4	4a	0.20	16.3	8.4	..	A ¾-inch plug cock used for 7 months as a test cock on sulphite digester.
5	5a	0.19	16.5	8.3	..	Side relief strainer from sulphite digester, length of service unknown.
6	6a	0.54	26.7	11.2	..	A 4-inch blow-off valve removed in excellent condition after 2 years service handling sulphite liquor. This valve was not heat treated before being put into service.

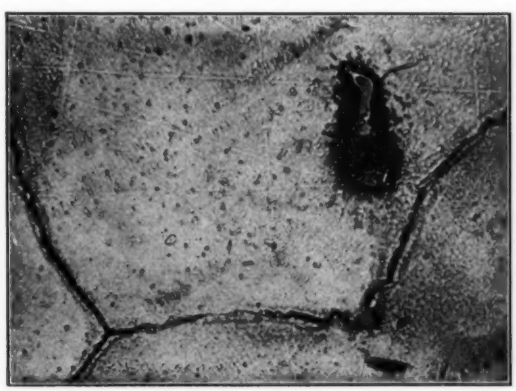

FIG. 2-c
Section of Sample 2, Fig. 2-a, at point marked "B" to which corrosion had not penetrated. Etched with Aqua Regia. x 1000.

FIG. 3-c
Sample of Sample 3, Fig. 3-a, at point marked "B" to which corrosion had not penetrated. Etched with Aqua Regia. x 1000.

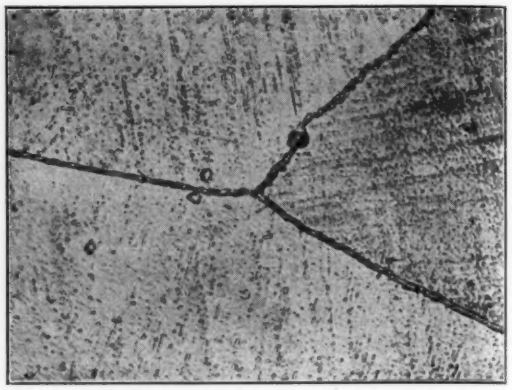

FIG. 5-c
Section of Sample 5, Fig. 5-a, at point marked "B" to which corrosion had not penetrated. Etched with Aqua Regia. x 1000.

material similar to that shown in Fig. 4c. In Figs. 2c and 3c the intercrystalline material is less prominent at the grain boundaries, but in Fig. 2c a large mass of what is presumed to be the same constituent can be seen within a grain as well. The accelerated attack by the etching reagent around this particle indicates that corrosion in this region would have occurred in service if the sulphite liquor had reached this point. Accelerated attack by the etching solution, but to a lesser extent, may be noticed at the grain boundaries in Figs. 1c and 4c.

The appearance of the intergranular material in Figs. 3c and 5c is quite different from that in Figs. 1c and 4c. However, as will be seen from Figs. 3b and 5b, the corrosion was intergranular as in the other cases.

Fig. 6c shows the microstructure of a section of the valve disc from the cast valve that stood up well in service. It is interesting to note that a separate constituent in the form of massive carbide particles is present, but that its presence did not lead to failure in service, nor was there any indication of the type of accelerated attack by the etching reagent shown in Fig. 2c. To what this better performance is due does not fall within the scope of this report, but presumably it is associated in some manner with the extra 2½ per cent nickel and 10 per cent chromium.

Improving Corrosion Resistance of a Typical Casting

In view of the fact that in each of the five cases of failure an intergranular constituent was present, an opportunity was provided to apply the information discussed in the review of the literature. In particular, it was felt that it should be possible to improve the corrosion resistance of any of the castings by taking the intergranular constituent into solution, if possible, by proper heat treatment as suggested in item 7b. At the same time, it would serve to establish more definitely any association of the intergranular constituent with the corrosion leading to failure. Of the castings which had failed in service, only one, number 5, provided sufficient uncorroded material for further work.

Specimens were cut from the flange of this strainer at points remote from seriously corroded areas. These pieces were machined on all sides to remove all corroded metal. This procedure yielded specimens about ½ x ⅝ x 1½ inches.

The plan was to redissolve the intergranular constituent in two of the specimens by holding them at 2050 deg. F. for one hour, followed by a water quench and then to reprecipitate the constituent in one of them by holding it at 1200 deg. F. for 100 hours and cooling in air. The selection of these heat-treating conditions was based upon prior knowledge that they should be suitable to produce the desired effect. The conclusion should not be drawn that the temperatures used were the only proper ones. The specimens thus provided were to be compared metallographically with a specimen just as it was cut from the casting.

The photomicrographs obtained in this investigation are shown in Fig. 5c, which represents the metal in its original condition, 5d the metal as quenched from 2050 deg F., and 5e the metal quenched from 2050 deg F. and subsequently held at 1200 deg. F. for 100 hours and cooled in air.

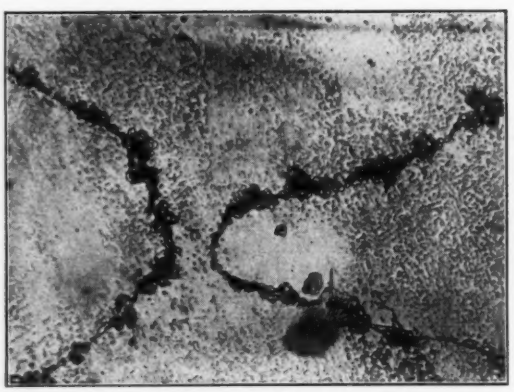

FIG. 4-c
Section of Sample 4, Fig. 4-a, at point marked "B" to which corrosion had not penetrated. Etched with Aqua Regia. x 1000.

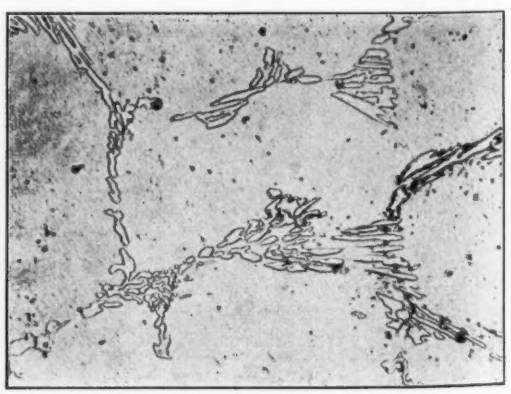

FIG. 6-c
Typical section of Sample 6, Fig. 6-b. Etched with Aqua Regia. x 1000.

Comparisons of Figs. 5c and 5d definitely reveals the fact that the intergranular constituent was completely dissolved by the heat treatment given the specimen.

Comparison of Figs. 5d and 5e likewise shows a reprecipitation of a constituent at the grain boundaries. The microscopic appearance of the intergranular constituent in Fig. 5e is different from that in Fig. 5c, but on re-etching with Murakami reagent (10 grams potassium ferricyanide plus 10 grams potassium hydroxide in 100 cc. water) the constituents darkened to about the same degree.

It is interesting to note from Fig 5e that the specimen suffered deep etching adjacent to the precipitated material not unlike that shown in Fig. 2c.

There is no reason to believe that in the production and use of the casting it ever remained in the neighborhood of 1200 deg. F. for a prolonged period. This in itself should be enough to account for the fact that it was attacked to a lesser extent by the etching reagent (Fig. 5c) than the specimen purposely held at 1200 deg. F. for 100 hours (Fig. 5e).

The next logical step would have been to expose the specimens discussed above to the same conditions of sulphite service under which the casting from which they had been taken had failed. Such a test would have established a more definite connection between the intergranular constituent and the intergranular corrosion which had led to failure.

Since the time available made such a test impractical, it was felt that useful results might be obtained by means of an accelerated laboratory test. Acid copper sulphate had been shown to be a useful tool in such investigations, therefore, it was employed in the present case.

The specimens were first exposed for 50 hours to the commonly used Strauss solution (10 per cent copper sulphate 10 per cent sulphuric acid) boiling under reflux. Since they showed no visible evidence of attack after this treatment the indications of the work of Rutherford and Aborn *(3)* led to the use of a solution of low copper content, viz: 5 per cent copper sulphate and 10 per cent sulphuric acid, to which the specimens were exposed for an additional 150 hours. After this second exposure there was some evidence of attack on two of the samples as shown by visual inspection and by striking the suspended specimens and noting the differences in "ring." However, before making any further inspection that would necessitate destruction of the specimens (which could not be replaced) it was decided to carry the corrosion test even further by using the modified Strauss solution as described by Rutherford and Aborn *(3)* (about 1 per cent copper sulphate, 8 per cent sulphuric acid). This final exposure lasted 120 hours, making a total exposure to corroding solutions of 320 hours.

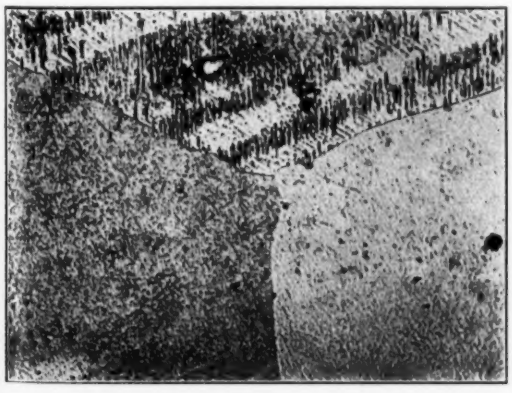

FIG. 5-d
Section of sound portion of Sample 5, Fig. 5-a, held at 2050 deg. F. for one hour and quenched in water. Etched with Aqua Regia. x 1000.

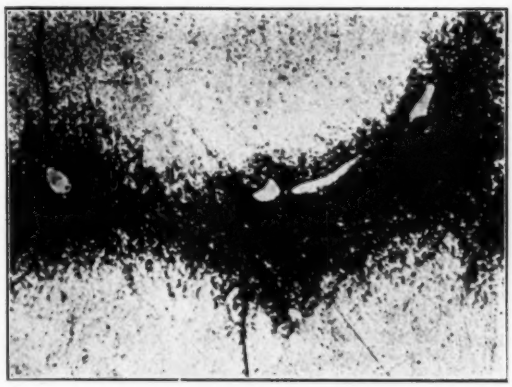

FIG. 5-e
Section of sound portion of Sample 5, Fig. 5-a, held at 2050-deg. F. for one hour and quenched in water, then held at 1200 deg. F. for 100 hours and air cooled. Etched with Aqua Regia. x 1000.

It cannot be concluded that there was no intergranular attack by the first solution, since it has been demonstrated that visual inspection very often fails to disclose evidence of such intergranular corrosion. Consequently, there may well have been an appreciable attack during the first few hours of test in the original Strauss solution.

Indications of the disintegration of two of the specimens used in the test described above that showed up during the removal of portions for microscopic study were confirmed by subsequent bend tests. These showed that the unheat-treated portion of the original casting (Fig. 5c) and the specimen held at 1200 deg. F. (Fig. 5e) had been almost completely disintegrated by the test solutions whereas the sample quenched from 2050 deg F. (Fig. 5d) was still sound.

The extent of intergranular penetration of the unheat-treated portion of the original casting is shown in Fig. 5f. There is no important difference in the extent of attack on this specimen as compared with that of the sample held at 1200 deg. F. as shown in Fig. 5h. It is interesting to note that the nature of the attack on these specimens is similar to that which resulted in failure of the castings in service (see especially Figs. 2b and 5b).

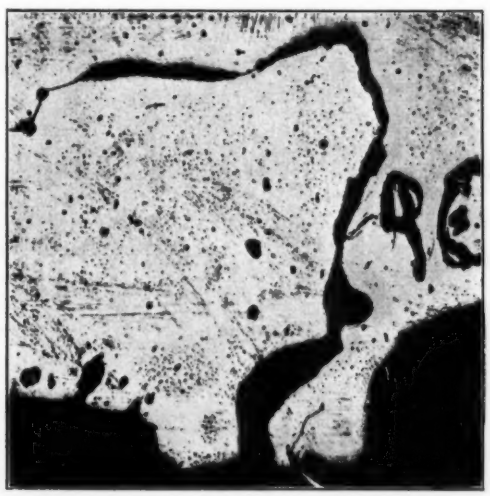

FIG. 5-f
Section of sound portion of Sample 5, Fig. 5-a, after 320 hours' exposure to boiling acid copper sulphate solution. Etched with Aqua Regia. x 100.

The absence of intergranular penetration of the sample quenched from 2050 deg. F. (Fig. 5d) is shown more definitely by Fig. 5g. The only effect of the test solutions was to etch the surface of this specimen slightly. No intergranular attack occurred.

It would seem then, that the intergranular constituent is definitely associated with intergranular corrosion and that it can be taken into, or kept in, solution by proper heat treatment, with consequent benefit to the resistance of the alloy to intergranular attack as measured by the accelerated test in the laboratory. It is reasonable to expect that such benefits of heat treatment would extend to resistance to attack by sulphite liquor in service.

The mechanism (holding at 1200 deg. F. to yield the structure shown in Fig. 5e) by which the metal represented by Fig. 5d was made susceptible to intergranular attack suggests that the intergranular corrosion of the casting in service was due chiefly to the lack of proper heat treatment. However, the low alloy content (see Table I) may well have contributed to its early failure.

Conversely it is evident that proper heat treatment of alloys of this type provides at least one means of insuring satisfactory performance in sulphite liquor. This has been demonstrated in practice by the general success of heat treated castings now in use.

Acknowledgment

The committee and the authors of this report wish to thank those who supplied the castings for examination especially V. P. Edwardes of the International Paper Company, Mr. Davidson of the Welland Steel Castings Company, and J. D. Corfield of the Michigan Steel Castings Company. They are also grateful to M. R. Morris of the Republic Steel Corporation for arranging for the chemical analysis of the material supplied.

The authors gratefully acknowledge the helpful criticism and assistance of their colleagues in connection with this work.

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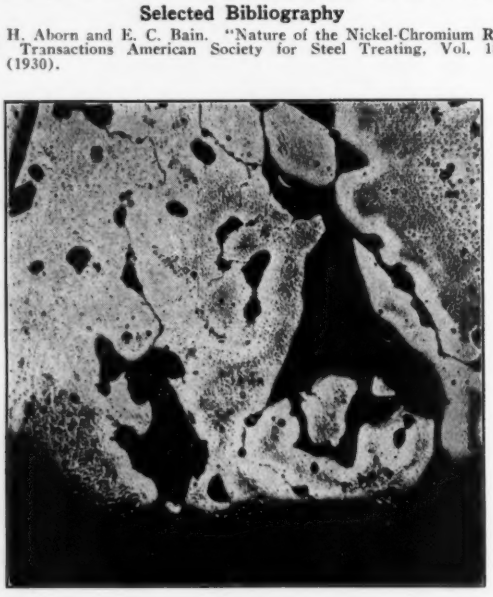

FIG. 5-h
Same material as Fig. 5-a after 320 hours' exposure to boiling acid copper sulphate solution. Etched with Aqua Regia. x 100.

FIG. 5-g
Same material as Fig. 5-d after 320 hours' exposure to boiling acid copper sulphate solution. Etched with Aqua Regia. x 100.

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Testing the Blood Resistance of Butchers' Wrapping Paper*

By C. E. Libby[1] and Leonard Parkinson[2]

Abstract

Since the present standard size testing methods do not definitely show the degree of resistance of butchers' wrapping paper to blood penetration, a method is devised whereby blood serum is applied to the surface of these papers in a Penescope. The rate of blood serum absorption by the paper is directly proportional to the rate of absorption of meat juice and blood.

The group of papers designated by the paper trade under the general classification of wrappings include a variety of papers manufactured to individual specifications and intended for utilization in a specific manner. Perhaps none of the various papers included in this group are more individual in their characteristics than the class of wrappings embraced by the terms butchers' dry finish, butchers' fiber, and butchers' manila. While it is recognized that each of these varieties possess distinctive properties they will be referred to hereafter in this paper by the collective term "butchers' wrapping".

Butchers' wrapping paper as the name implies is used by butchers and meat market operators for the specific purpose of wrapping meats sold to customers or for separating cuts of meat in market displays. The fiber furnish of this group of papers is generally a mixture of sulphite and mechanical wood pulps although comparatively recently the manufacturers of kraft papers have entered this field. All of these papers should possess the general characteristics of wrapping papers, i. e. strength, to a marked degree. This quality is especially important in the case of these papers since they may become impregnated with blood after long standing in contact with freshly cut meats with a resulting loss of much of the original strength of the paper.

Blood absorption by the paper results not only in loss of strength of the sheet but is open to the serious objection that blood exudations through the paper may stain clothing or other materials with which it comes in contact. It is also believed that excessive blood absorption by a slack sized wrapper sometimes induces a reaction between the chemical constituents of the paper and the meat with the result that the meat blackens or otherwise discolors. Since the degree of blood absorption plays such an important part in the utility of this class of papers it is obviously important to both manufacturer and consumer that a satisfactory method be available for evaluating this quality. It was the object of this investigation therefore, to study existing methods for testing the sizing quality or blood and meat juice resistance of the wrapping papers in this group and if necessary to develop a more satisfactory method for making this determination. The need for this investigation was emphasized by many manufacturers of butchers' wrapping paper who stated that the numerical values obtained by the use of existing methods of testing degree of sizing bear no relation to the true resistance of these papers to blood absorption as observed from the actual use of these papers.

Application of Existing Size Testing Methods for Determining Degree of Blood Penetration

The cooperation of a considerable number of mills that manufacture butchers' wrapping papers was secured and these mills furnished ample samples for the tests[3]. A list of the cooperating mills and the samples which they furnished is given in code in Table I in connection with the tabulation of results obtained by the several methods of testing which were investigated.

The samples were first conditioned in the testing laboratory which was maintained at the standard TAPPI testing conditions of 70 deg. F. and 65 per cent relative humidity. An attempt was made to secure and test only samples of the same weight and finish although there were a few exceptions in the samples submitted by the cooperating mills. The majority of the samples submitted were of the popular dry finish grade and were 40 pounds in

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* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Paper Testing Committee.

[1] Member of TAPPI, Professor of Pulp & Paper Manufacture, New York State College of Forestry, Syracuse, N. Y.
[2] Student, New York State College of Forestry, Syracuse, N. Y.

[3] The authors are indebted to William Harding of the American Cyanamid and Chemical Co. for his interest in this problem and his efforts in securing the cooperation of mills in furnishing samples for test.

TABLE I.

TABULATION OF PENETRATION VALUES OBTAINED BY ALL SIZE TESTING METHODS INVESTIGATED

Mill No.	Sample No.	Index No.	Liver Test	Blood Serum	Lactic Acid	Ink Flotation	Valley Size Test	Water Flotation
2	A	3	5.3 Mins.	1.63 Mins.	92.0 Secs.	3.0 Mins.	67.0 Secs.	60 Secs.
1	A	1	2.7 Mins.	0.90 Mins.	13.0 Secs.	1.3 Mins.	18.3 Secs.	840 Secs.
1	B	2	3.9 Mins.	.94 Mins.	24.6 Secs.	1.2 Mins.	8.5 Secs.	45 Secs.
3	A	4	7.0 Mins.	2.0 Mins.	21.0 Secs.	.7 Mins.	25.0 Secs.	105 Secs.
4	A	5	7.2 Mins.	3.25 Mins.	74.0 Secs.	4.8 Mins.	94.0 Secs.	90 Secs.
5	A	6	8.3 Mins.	4.5 Mins.	277.5 Secs.	6.5 Mins.	87.0 Secs.	135 Secs.
5	B	8	9.0 Mins.	6.0 Mins.	51.5 Secs.	2.0 Mins.	18.5 Secs.	90 Secs.
2	B	7	9.0 Mins.	1.77 Mins.	221.7 Secs.	6.7 Mins.	125.0 Secs.	180 Secs.
4	B	9	10.4 Mins.	3.7 Mins.	316.0 Secs.	8.0 Mins.	400.0 Secs.	120 Secs.
3	B	10	11.0 Mins.	4.65 Mins.	200.0 Secs.	18.0 Mins.	381.0 Secs.	165 Secs.
6	A	11	12.0 Mins.	6.5 Mins.	109.0 Secs.	10.5 Mins.	15.0 Secs.	60 Secs.
3	C	12	12.0 Mins.	6.25 Mins.	553.0 Secs.	17.5 Mins.	425.0 Secs.	132 Secs.
6	B	13	12.0 Mins.	6.74 Mins.	136.6 Secs.	3.0 Mins.	18.3 Secs.	60 Secs.
7	A	14	12.5 Mins.	8.8 Mins.	317.0 Secs.	10.0 Mins.	85.3 Secs.	90 Secs.
8	A	15	14.0 Mins.	6.83 Mins.	39.0 Secs.	1.0 Mins.	85.0 Secs.	120 Secs.
9	A	16	14.5 Mins.	15.3 Mins.	600.0 Secs.	20.0 Mins.	187.3 Secs.	120 Secs.
10	A	17	14.7 Mins.	9.15 Mins.	208.0 Secs.	10.0 Mins.	111.0 Secs.	112 Secs.
1	C	18	15.5 Mins.	10.5 Mins.	89.0 Secs.	5.0 Mins.	10.5 Secs.	100 Secs.
11	A	19	15.8 Mins.	10.6 Mins.	66.4 Secs.	5.0 Mins.	10.6 Secs.	120 Secs.
2	C	20	20.2 Mins.	14.0 Mins.	121.2 Secs.	3.88 Mins.	181.3 Secs.	110 Secs.
12	A	21	20.2 Mins.	15.5 Mins.	173.5 Secs.	5.5 Mins.	67.5 Secs.	75 Secs.
8	B	22	25.3 Mins.	15.0 Mins.	264.0 Secs.	21.5 Mins.	103.0 Secs.	120 Secs.
2	D	23	26.7 Mins.	20.3 Mins.	285.0 Secs.	7.0 Mins.	400.0 Secs.	120 Secs.
9	B	24	29.0 Mins.	21.0 Mins.	319.0 Secs.	24.0 Mins.	118.0 Secs.	135 Secs.
8	C	25	72.5 Mins.	25.5 Mins.	481.7 Secs.	60.0 Mins.	305.0 Secs.	145 Secs.
8	D	26	75.7 Mins.	27.5 Mins.	544.0 Secs.	62.0 Mins.	500.0 Secs.	120 Secs.

weight, (24 x 36—480). Two notable exceptions were samples 4A and 8B. Sample 4A was a 50 pound butchers' fiber or water finished paper while 8A was a 55 pound sheet of the same variety. The tests on these two papers therefore are not strictly comparable with the other tests recorded but since water finishing introduces an unknown variable, the papers are classified in the same order that would have been followed had they met the specifications of the other papers tested.

Four common methods of testing the degree of sizing of paper were applied to each of these twenty-six samples of butchers' wrapping paper. These methods were flotation on water using a water soluble indicator, flotation on a standard iron tannate ink, the Valley size testing instrument, and an Abrams Penescope tester with temperature control.

The water flotation tests were conducted in accordance with the recommendations of the Bureau of Standards as developed by Carson and modified by the TAPPI Paper Testing Sub-Committee on Water Resistance[4].

Ink flotation tests were conducted in accordance with the standard TAPPI procedure outlined in Paper Testing Methods[5] using the standard iron tannate ink bath.

The Valley size testing instrument was employed in obtaining a third set of penetration values. This instrument was operated in accordance with the recommendations of Alexander[6] in his original announcement of this instrument.

An Abrams Penescope tester was used for obtaining the final size test values by the common methods for determining degree of sizing of paper. The instrument was used with lactic acid solution as recommended by Abrams[7] but the concentration was reduced to 5 per cent on account of the slight caliper of the sheet. A head of 2 inches of acid was maintained in the pipette of each instrument and the temperature was held at 70 deg. F. The test samples were coated on one side with a 0.1 per cent solution of methyl orange, immediately blotted, and allowed to dry for ten minutes. The end point of the test was considered to be the appearance of five red spots not larger than the head of a pin on the outer methyl orange coated surface of the test sample.

The results of the foregoing sizing tests are tabulated in Table I and will be discussed in connection with the correlation of these tests with actual blood penetration as determined by the so-called "Liver Test" with which these values are compared.

[4] Codwise, P. W. Paper Trade Journal 94, No. 5, p. 42, Feb. 4, 1932.
[5] Paper Testing Methods 1928, p. 76, Lockwood Trade Journal Co., New York.
[6] Alexander, J. E. Testing the sizing quality in paper with the Valley Tester. Paper Trade Journal 76, No. 15, p. 187-189, April 12, 1923.
[7] Abrams, Allen. The Penescope—A New Penetration Tester. Paper Trade Journal 84, No. 3, p. 44-47, Jan. 20, 1927.

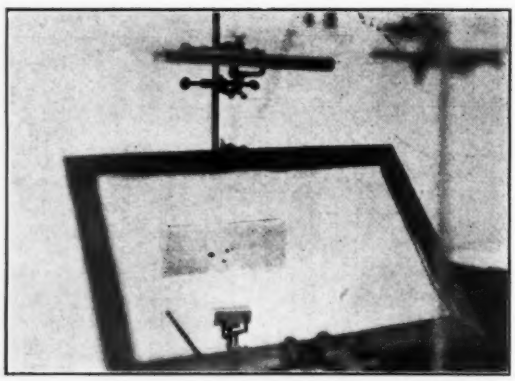


FIG. 1
End point of the liver test.

The Liver Test

The failure of ordinary size testing methods to give information on actual blood penetration through butchers' wrapping papers has encouraged the development of several practical tests for securing this information, the best known of which is the liver test. This test consists of wrapping slices of beef liver in the paper to be tested and observing the time required for complete penetration of blood. Other meats may be used for this purpose but beef liver seems to be most satisfactory for the reason that it contains an abundant supply of blood and blood serum and in actual use causes more complaints regarding defective paper than any other meat product.

It must be admitted that even under the best conditions the results obtained by use of the liver test are only approximations and the use of so crude a test as a basis for comparison in a scientific investigation may be subject to criticism. However, every effort was made to eliminate from the test as many variables as possible and the resulting agreement between duplicate tests was satisfactory and compared quite favorably with the results of sizing tests conducted in scientific apparatus under closely controlled conditions.

Considerable difficulty was experienced initially in obtaining a liver which would give check results. A market was finally located which could furnish one day old beef liver obtained from native beef. No effort was made to determine the specific blood and serum content of this liver but an attempt was made to secure a product of uniform light color which had not been frozen or darkened by congealed blood.

In the actual operation of the test, the liver was cut into slices 2 x 4 inches and approximately one-half inch in thickness. Differences in thickness of the liver slices caused unequal pressure on the paper samples with corresponding more rapid penetration at the high points. The liver slices were next wrapped in the paper samples to be tested and then placed side by side on a raised glass shelf. (Fig. 1.). The wrapping was made in such a manner that only one thickness of paper was between the liver and the glass. A piece of board 3 x 8 x 3/8 inches and weighing 90 grams was then placed on each sample to prevent unfolding of the paper and a weight of 500 grams placed on the board to provide pressure. The elapsed time was recorded from the moment of placing the 500 gram weight in position until three small distinct spots of blood penetration showed through the paper as indicated by observation in the mirror set at an angle beneath the glass shelf. Ten tests were run on each grade of paper and the average time of penetration calculated. All tests were made under the standard atmospheric conditions prescribed for paper testing. The results of these blood penetration tests on twenty-six samples of paper are recorded in Table I.

The Blood Serum Test

While the liver test is a satisfactory practical test in the hands of a single investigator, there are so many variables inherent to it, over which no control is possible, that it could never be developed to a point where a close agreement of results could be expected from different operators. A test suitable for universal application should eliminate those features of the liver test not readily subject to control and at the same time preserve the desirable characteristics and practical nature of this test. A satisfactory test should be capable of furnishing reproducible results to any investigator at any time.

Close inspection of the exudation from cuts of liver or other meats which have been standing for some time leads to the conclusion that this fluid is more of the nature of blood serum than what is commonly termed true blood, although before coagulation of the red corpuscles this fact is obscured by the high color of this latter component. This observation led to an investigation of blood serum as a testing fluid for butchers' wrapping papers, and the results of this investigation would seem to indicate that the method has definite advantages over any other sizing or penetration test which has been proposed for this class of papers.[8]

Blood serum can be obtained in unlimited quantities and at nominal cost from a number of the large meat packing companies who manufacture an extensive line of by-products from their packing wastes. The serum used in this investigation was obtained from Armour & Co. of Chicago.[9] It was a water-like greyish-white fluid containing exactly 10 per cent of solids. Normal beef blood serum has a pH value of 7.2 to 7.4. The serum employed in these tests was adjusted to pH 6.6 by the addition of phosphoric acid. It was preserved by the addition of 15 grams of sodium tri-chlor phenate per gallon. The efficiency of this preservative may be judged from the fact that unspoiled samples of the serum over one year old are still in our laboratories. When not in use however, these samples have been stored in a refrigerator. If exposed to slightly elevated temperatures in a testing instrument for extended periods of continuous use, the serum will darken and coagulate and must be replaced with a fresh supply. Blood serum may be obtained in the form of dried flakes and while the scope of this investigation did not permit experimentation with this solid material, it would seem to offer possibilities for more simple and better utilization than the original fluid by mills and laboratories not equipped with refrigeration for storage purposes.

The application of blood serum in determining the blood resisting properties of butchers' wrapping paper was made in a water jacketed Abrams Penescope tester.[10] Consideration was given to the pH value of the serum in the selection of an indicator for determining the end point of the test. Brom cresol purple was the indicator finally selected. This indicator is yellow in all pH ranges under 5.2, which evidently covered the pH values of the dry paper samples under test, and purple in all pH ranges above 6.8. The working range of the indicator thus being from pH 5.2 to pH 6.8 established ideal conditions for the color change to a deep purple at pH 6.6 which resulted on penetration of the blood serum through the test sample. A 0.5 per cent solution of the Brom cresol purple indicator was painted with a soft brush on the surface of the test samples, which had previously been cut out with a die, the excess indicator immediately blotted off and the samples allowed to dry for ten minutes.

The paper samples after drying were then inserted in the Penescope tester, with the indicator coated side of the paper away from the testing fluid. The cover glasses with which the instrument is equipped were used to prevent bulging of the paper due to the pressure of the hydrostatic head of fluid. The blood serum which had previously been heated to the predetermined testing temperature of 85 deg. F. by the passage of heated water through the jackets of the Penescope instruments was then admitted until a volume of 10 cc., equivalent to a head of 10 inches, was contained in the pipettes attached to the instrument bodies. A constant temperature of 85 deg. F. was maintained throughout the period of the test by circulating water in the jackets of the Penescopes, the water having been heated to this temperature in water cooled electrical rheostats.

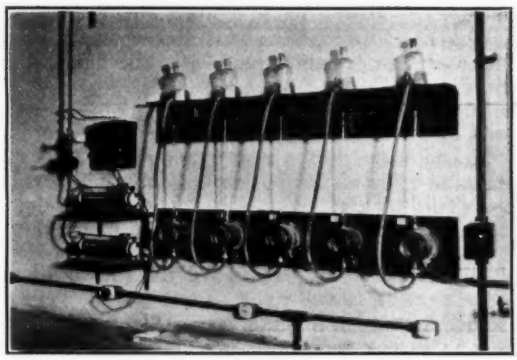


FIG. 2
Assembly of jacketed Penescopes with temperature control.

The end point of the test was taken when five purple spots at least the size of a pin head appeared on the outer exposed surface of the test samples, due to the penetration of the blood serum through the sheets. The time of penetration was recorded as the elapsed time, taken with a stop watch, between the moment of admission of the blood serum and the appearance of the five purple spots. Ten tests were run on each grade of paper and the results of these tests on twenty-six samples of butchers' wrapping paper are recorded in Table I.

Discussion of Results

The numerical values obtained from the various tests and recorded in Table I are correlated graphically in Fig. 3. The blood penetration values obtained in the liver test are used as the basis of a systematic arrangement of the various samples, the sample having the lowest blood penetration value being numbered 1 and that having the highest value being numbered 26. All intermediate blood penetration values are arranged in ascending order between these two numbers as minimum and maximum limits. The numerical values obtained by all other testing methods were then plotted against the paper index numbers as determined by the blood penetration tests.

An inspection of the graphical presentation of these test data as shown in Fig. 3 indicates that the blood serum method of determining resistance to blood penetration is the only method which shows a positive tendency towards agreement with actual blood penetration as shown by the liver test. This tendency becomes more obvious when a smooth curve is drawn as a mean through the plotted penetration values of the blood serum tests alongside a similar curve drawn as a mean through the penetration values obtained from the liver tests. These curves are shown in Fig. 4. While an absolute parallelism of curves is not shown, the agreement is remarkable considering the variables inherent in the liver test from which the basis curve was obtained.

A certain agreement is apparent between the results of the lactic acid, the ink flotation, and the Valley size tests but none of these results show any relation to actual blood penetration as shown by the liver test. The water flotation tests were the most erratic of the entire group and showed no relation to any of the other tests including the blood penetration values. These results confirm the

[8] The authors again acknowledge the assistance of William Harding of the American Cyanamid and Chemical Corp. who proposed the use of blood serum as a testing fluid.

[9] The authors are indebted to Armour & Co., represented by C. B. Smith, for their interest in this problem and for furnishing various samples of serum of different characteristics for use in this investigation.

[10] A description of this instrument and its use appears in the paper entitled "The Effect and Control of Variables in the Size Testing of Paper Boards" by Libby and Casciani. Paper Trade Journal 94, No. 20, p. 29, May 19, 1932.

statements of many manufacturers, particularly with relation to the water flotation tests, that ordinary size tests give no useful information relative to the blood resisting qualities of butchers' wrapping papers.

The agreement of the results obtained by the several methods of testing is shown in another form in Fig. 5. The chart indicates the relative standing of each sample as compared with all other samples for each method of testing. This relative standing is indicated by the position of the index number of the sample in each vertical column assigned to each test method. For example, paper sample with index number 1 gave the lowest test with liver, lowest with blood serum, third lowest Valley size test, fourth lowest ink flotation test, etc., and was assigned position number 1 for both liver and blood serum, and third and fourth positions from the top, respectively, for the other two tests. The lines connecting the index numbers in the six columns indicate at a glance the relative agreement of the several methods employed. Horizontal lines indicate perfect agreement; lines inclined one position, excellent agreement; inclined two positions, satisfactory agreement; three positions, poor agreement; and four positions or more, no agreement.

Using the above basis of classification, a brief summary of the comparative agreement of the five size testing methods investigated with actual blood penetration values as observed in the liver test is presented in Table II.

1. Results obtained from the application of present standard size testing methods to the determination of the blood resisting properties of butchers' wrapping paper bear no relation to the actual ability of this paper to inhibit blood penetration.

TABLE II
RELATIVE AGREEMENT OF STANDARD SIZE TESTING METHODS WITH ACTUAL PENETRATION OF BLOOD THROUGH BUTCHERS' WRAPPING PAPER

Blood Penetration	Blood Serum	Valley Size Test	Ink Flotation	Lactic Acid	Water Flotation
Perfect Agreement.....	8	2	4	1	1
Excellent Agreement.....	12	2	2	3	4
Satisfactory Agreement....	4	6	2	7	3
Poor Agreement.....	1	0	2	0	1
No. Agreement.....	1	16	16	15	17

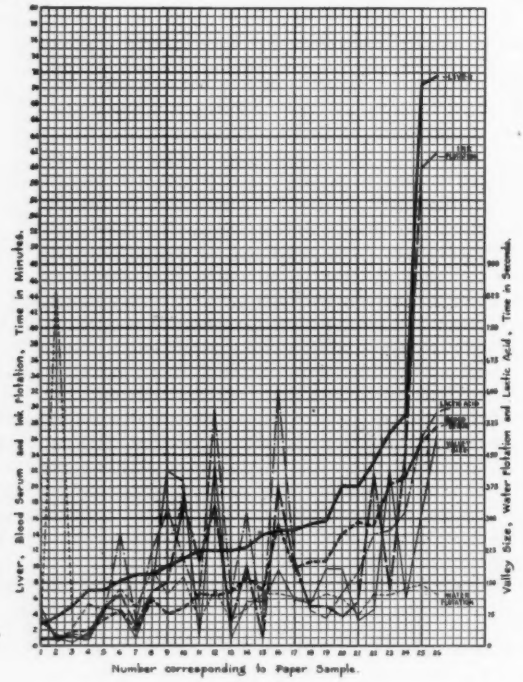

Liver, Blood Serum and Ink Flotation, Time in Minutes.
Valley Size, Water Flotation and Lactic Acid, Time in Seconds.
Number corresponding to Paper Sample.

FIG. 3
Agreement of common size testing methods with blood penetration as indicated by liver test.

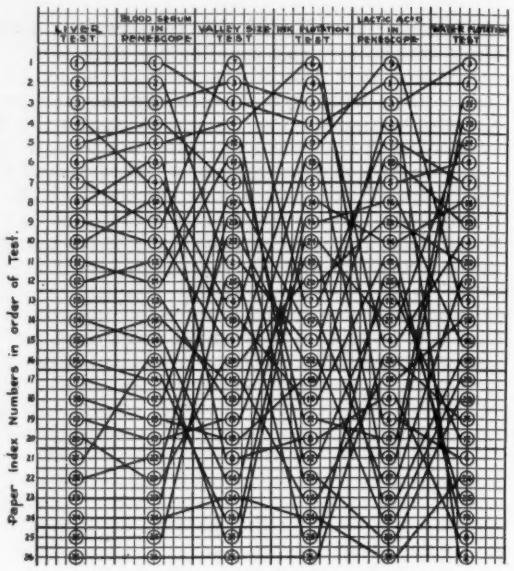


FIG. 5
Correlation of results of all penetration methods investigated.

2. The rate of absorption of blood serum by paper fibers is directly proportional to the absorption rate of meat juice and blood, thereby furnishing a convenient medium for measuring this important quality.
3. The blood resisting properties of butchers' wrapping papers can be determined satisfactorily by the application of blood serum to the surface of these papers in an Abrams Penescope tester.

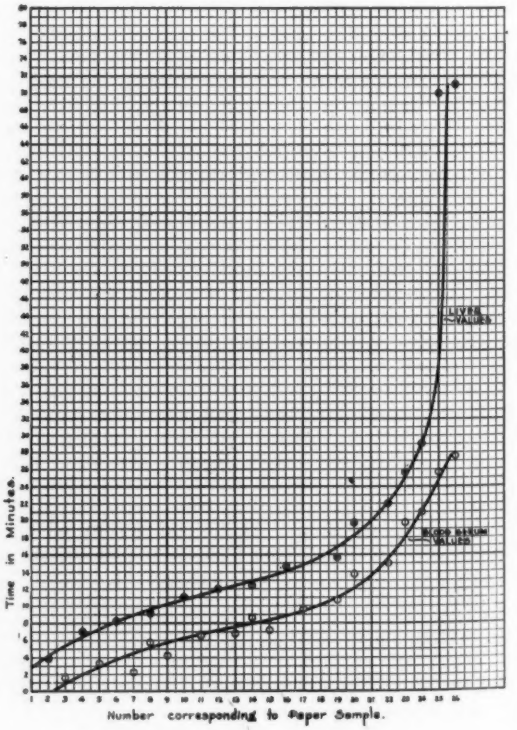


FIG. 4
Agreement of blood and blood serum penetration tests.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING APRIL 29, 1933

CIGARETTE PAPER

Champagne Paper Corp. Ile de France, Havre, 34 cs.; G. A. Henshaw & Son, Scythia, Liverpool, 1 cs.; American Tobacco Co., McKeesport, Havre, 100 cs.

WALL PAPER

Globe Shipping Co., Hamburg, Hamburg, 1 ble.; ———, Hamburg, Hamburg, 4 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Capetown Maru, Hamburg, 38 rolls; Perkins Goodwin & Co., Augsburg, Bremen, 126 rolls; ———, Hamburg, Hamburg, 40 rolls.

PRINTING PAPER

International F'd'g Co., Bilderdyk, Rotterdam, 17 cs.

WRAPPING PAPER

Van Oppen & Co., Silverwalnut, Genoa, 49 cs.; P. C. Kuyper & Co., Silverwalnut, Genoa, 4 cs.; F. C. Strype, West Arrow, Antwerp, 1 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Amer. Banker, London, 10 cs.; A. Giese & Son, Bilderdyk, Rotterdam, 1 cs.

FILTER MASS

Atlantic F'd'g Co., Ala, Rotterdam, 20 cs.

COLORED PAPER

F. Murray Hill Co., Hamburg, Hamburg, 3 cs.

SURFACE COATED PAPER

Gevaer Co. of America, Minnetonka, Antwerp, 77 cs.

METAL COATED PAPER

National City Bank, Europa, Bremen, 6 cs.; Globe Shipping Co., Augsburg, Bremen, 26 cs.

COATED PAPER

Chas. Happel, Hamburg, Hamburg, 1 cs.

PHOTO PAPER

American Express Co., Hamburg, Hamburg, 3 cs.; ———, Hamburg, Hamburg, 2 cs.

DECALCOMANIA PAPER

Sellers Transportation Co., Europa, Bremen, 9 cs.; B. F. Drakenfeld & Co., Scythia, Liverpool, 5 cs (duplex), 2 cs. (simplex).

TRANSFER PAPER

Manhattan Decalcomania Co., Europa, Bremen, 1 cs.; E. Hennigson & Co., Augsburg, Bremen, 1 ble.

TISSUE PAPER

Columbia Carbon & Ribbon Manfg Co., Amer. Banker, London, 1 cs.; B. F. Drakenfeld & Co., Scythia, Liverpool, 2 cs.; Van Oppen & Co., Pr. Harrison, Marseilles, 16 cs.

PAPER BOARD

Colmar Paper Corp., Minnetonka, Antwerp, 4 cs.

CARD BOARD

'Orsay Perfumery, Ile de France, Havre, 3 cs.; American Express Co., Hamburg, Hamburg, 45 cs.

PASTE BOARD

———, Augsburg, Bremen, 60 cs.

MISCELLANEOUS PAPER

A. W. Fenton, Inc., Ile de France, Havre, 8 cs.; Hudson F'd'g & Shipping Co., Ile de France, Havre, 2 cs.; Japan Paper Co., Pr. Grant, Kobe, 45 cs.; U. S. Envelope Co., Pr. Grant, Yokohama, 12 cs.; National City Bank, Hokkai Maru, Yokohama, 12 cs.; R. Wilson Paper Corp., Cameronia, Glasgow, 11 cs.

RAGS, BAGGINGS, ETC.

W. Steck & Co., Capetown Maru, Hamburg, 55 bls. rags; W. Steck & Co., Exilona, Genoa, 75 bls. rags; J. Cohen & Son, Inc., Scythia, Liverpool, 22 bls. paper stock; ———, Cameronia, Glasgow, 28 bls. rags; E. J. Keller Co. Inc., West Arrow, ———, 90 bls. bagging.

OLD ROPE

A. S. Wilson Inc., Minnetonka, Antwerp, 54 coils; W. Steck & Co., Ala, Rotterdam, 47 coils.

CHINA CLAY

L. A. Salomon & Bro., Scythia, Liverpool, 140 bags.

CASEIN

D. C. Andrews & Co., Hamburg, Hamburg, 60 bags.

WOOD PULP

Perkins Goodwin & Co., Capetown Maru, Hamburg, 700 bls. wood pulp, 108 tons; J. Manheimer, Bilderdyk, Rotterdam, 50 bls. wood pulp; A. Giese & Son, Bilderdyk, Rotterdam, 28 bls. wood pulp; Castle & Overton, Inc., Hamburg, Hamburg, 420 bls. wood pulp, 84 tons.

GLUE STOCK, ETC.

———, Augsburg, Bremen, 465 bags hide glue; ———, Winona County, Manchester, 251 bags hide cuttings.

BOSTON IMPORTS

WEEK ENDING APRIL 29, 1933

G. F. Malcolm Inc., Scythia, Liverpool, 23 cs. tissue paper; Atkinson Haserick & Co., Pr. Harrison, Genoa, 2 cs. wrapping paper; Bulkley Dunton & Co., Eiffel, ———, 625 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 29, 1933

Bank of N. Y. Trust Co., Winona County, Liverpool, 47 bls. rags; Castle & Overton, Inc., Winona County, Manchester, 49 bls. rags; F. Weber & Co., Exilona, Genoa, 8 cs. drawing paper.

BALTIMORE IMPORTS

WEEK ENDING APRIL 29, 1933

E. Butterworth & Co. Inc., Winona County, Liverpool, 93 bls. bagging, ———, Winona County, Liverpool, 110 coils old rope; Congoleum Nairn Co., McKeesport, Havre, 558 bls. rags; Bulkley Dunton & Co., C. of Baltimore, ———, 500 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING APRIL 29, 1933

Norfolk Natl. Bank of Commerce, Winona County, Manchester, 56 bls. bagging.

NEWPORT NEWS IMPORTS

WEEK ENDING APRIL 29, 1933

Parsons & Whittemore, Inc., Carlsholm, ———, 244 bls. sulphite.

John T. Gamble Goes To Appleton

John T. Gamble, general manager of the Union Bag and Paper corporation at the Hudson Falls plant for more than four years, will on May 1 be transferred to Appleton, Wis., and will at that time be accompanied by his family, says the *Post-Star* of Glens Falls, N. Y. Mr. Gamble will be in charge of the plants of the corporation in Hudson Falls, Appleton and Kaukauna, Wis. The decision of the corporation to locate Mr. Gamble at Appleton means that the offices of the general manager will be in that city instead of Hudson Falls. All other office workers will remain in Hudson Falls, it is understood. The Hudson Falls plant will have as superintendent William Duncan, who came here late last May when the labor trouble developed. Mr. Gamble will visit the Hudson Falls mills once a month, it was learned, but it is expected that he will spend the greater part of his time in Appleton.

Mr. Gamble came here from Camas, Wash., and had been employed in a responsible position with the Crown Williamette Paper company at Camas.

The report that Mr. Gamble was to leave was confirmed yesterday by a representative of The *Post-Star* and immediately thereafter the rumor was circulated that the Fenimore mill would start next month. Concerning the report Mr. Gamble said, "The Fenimore mill is no nearer starting than it was when the strike started. The company is obtaining a plentiful supply of raw paper and with the present conditions it would be most unwise to give such a proposition consideration. So far as I can see the Fenimore mill is closed for good."

New York Superintendents to Meet

The Northern New York Division of the American Pulp and Paper Mill Superintendents Association will hold its spring meeting Saturday, May 6 at the Red Coach Inn, Niagara Falls, N. Y. The registration fee has been placed at the nominal sum of $3.50 for men and $1.50 for ladies, which covers luncheon, banquet, entertainment and dancing. The chairman and a committee of arrangements have worked unusually hard to provide a specially interesting entertaining and profitable program.

After registration Saturday morning, a trip will be made to the Niagara Wire Weaving Company, Ltd., at Niagara Falls, Ont. In the mid-forenoon a paper will be presented on "New Developments in Wire Weaving," by E. J. Buell. After this, the return trip will be made to Niagara Falls, N. Y. and luncheon will be served at the Red Coach Inn. During the afternoon, the following papers will be presented:

"Stonite Rolls," by E. L. Tweksberry, Stowe-Woodward, Inc.; "Value of Laboratory Test to Superintendent," by Dr. H. S. Bristol, International Paper Company; "Modernize for Profit," by W. J. O'Brien, O'Brien Steam Specialty Company; "Advance Temperature Control of Paper Drying," by Avery Stanton, Mason Regulator Company.

After the presentation of the foregoing papers, there will be an open discussion from 5 to 6 P. M., ample time being given for discussion on all subjects. The banquet will be held at seven P.M. at the Red Coach Inn.

While the men are attending the business session Saturday afternoon, the ladies will be entertained. A very interesting sight-seeing trip is being planned for the ladies.

The committee of arrangements consists of R. W. Price and Fred J. Rooney. The officers of the Division are: Chairman, John Nolan, International Paper Company, Niagara Falls, N. Y.; first vice-chairman, B. D. Millidge, Howard Smith Paper Mills, Cornwall, Ont., Can.; second vice-chairman, H. R. Wheeler, Victoria Paper Mills Company, Fulton, N. Y.; secretary-treasurer, Robert W. Price, 39 Howard avenue, Lockport, N. Y.

Dismiss Complaint Against U. S. Gypsum Co.

WASHINGTON, D. C., May 3, 1933—The Federal Trade Commission has dismissed a complaint against the United States Gypsum Company, Chicago, involving use of the word "fireproof" in advertising gypsum wallboard, tileboard, lath, and sheathing. The case has been settled by stipulation.

In the stipulation the company contended that its gypsum products are in fact fireproof and that the advertisement of them as such is true. The company reserved the right to continue to so advertise its products but, without intending to imply or concede that it has heretofore so represented them, agreed that it will not hereafter represent that the use of its gypsum wallboard, tileboard, sheathing or lath, renders the building or buildings in which they are used fireproof, or that when applied to combustible partition studs they will make the building or buildings in which they are used fireproof.

Visit Brown-Bridge Mills

Fifty members of the American Society of Mechanical Engineers made a tour of inspection through the Brown-Bridge Mills of Troy, Ohio. This group had expressed a desire to witness the manufacture of gummed paper and cloth in a modernly equipped plant. As the processes involved in the manufacture were entirely new to most of the group, intense interest was expressed.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, May 3, 1933.

Trading in the local paper market was more lively during the past week. Demand for the various standard grades of paper was persistent and inquiries for future account were numerous. Sales forces of the leading paper organizations were more optimistic than for some time past. With manufacturers reluctant to make advance commitments, prices were steady to firm.

The position of the news print paper market continues unchanged, although quotations have been more stable since the recent announcement of a temporary price reduction by the International Paper Company. Production in the United States and Canada is being maintained in sufficient volume to take care of current requirements.

Demand for the various grades of paper board continues fairly active. Prices are generally holding to schedule, without difficulty. The fine paper market is displaying greater strength and there is talk of higher prices for book papers in the near future. Tissues are moving in good volume. The coarse paper market is steadier than of late.

Mechanical Pulp

Steadiness prevails in the ground wood pulp market. With offerings of both domestic and imported mechanical pulp limited, the industry continues in a sound statistical position. Operations at the ground wood pulp mills are reported to be proceeding in normal volume for the time of year. Prices are holding to schedule.

Chemical Pulp

The chemical pulp market is showing signs of improvement. Demand for the lower grades of both domestic and imported chemical pulp is better and prices are firmer. The better grades are generally marking time pending the outcome of the proposed inflation. Some producers have withdrawn quotations temporarily.

Old Rope and Bagging

Conditions in the old rope market are fairly satisfactory. Paper mill request for domestic and foreign old manila rope is moderately active. Small mixed rope is rather quiet. Old rope prices are steady. The bagging market is more buoyant. Gunny bagging and roofing bagging are in seasonal demand. Scrap bagging is irregular.

Rags

The domestic rag market is arousing more interest than of late. Cotton rags are exhibiting a stronger undertone due to the rise in the price of staple. No. 1 new white shirt cuttings are firmer and are now quoted at from 3.80 to 4.25. Roofing grades are in an improved position. Dark cottons are now selling at from .55 to .60.

Waste Paper

Board mill demand for the lower grades of paper stock is fairly active. Offerings of strictly folded news and No. 1 mixed paper are not excessive. No radical price changes have been reported. The better grades of waste paper are holding up well, especially hard and soft white shavings. Old kraft machine compressed bales are in good request.

Twine

Business in the local twine market is quite satisfactory for the season. Demand for the various grades is fairly persistent. Offerings are sufficient to cope with current requirements. Despite the usual keen competition for desirable orders, prices are holding to formerly quoted levels without difficulty.

PHILADELPHIA MARKET DECLINES

(*Continued from page 17*)

with collections now showing quite a decided betterment.

Most interesting of trade changes during the week was the addition of Charles Griffith to the sales department of the Thos. W. Price Company. Mr. Griffith's experience in the paper trade covers many decades. He was for many years a member of the D. L. Ward organization, subsequently going with the Whitaker Paper Company, and then rejoined the Ward company until taking up his new connection which begins today.

A. C. Hartman, of Sunbury, Pa., who a decade ago was connected with the Enterprise Paper and Bag Company, has re-entered its employ and will represent its general lines in the coal regions.

Hooper Paper and Twine Company has been appointed distributor for the Bibb Manufacturing Company, of Macon, Georgia, and will handle its several lines. In order to accommodate these and to increase its stock of fine papers and bookboard, particularly Old Georgia Bond and Pedrick Bond, alterations to its building are being made.

The Credit Men's Association of the Philadelphia Paper Trade meets on Tuesday, May 9.

Reports from Carlisle, Pa., are that following an idleness of over a decade, the Holly Glen Paper Mills near Carlisle will be operated by the Eaton-Dikeman Company, whose plant at Lee, Mass., was destroyed by fire last year. The Holly plant is under the ownership of James Miller, of Reading, Pa. It is expected that a thousand men will find employment when the re-equipment has been completed.

The Kieckhefer Container Company at Delair, N. J., has under way some new building projects.

Look for Return of 2c Postage

DAYTON, Ohio, May 1, 1933—Apparently business men and manufacturers have faith in the possibility of the postage rate being changed back to two cents as decided opposition has been expressed against the present three-cent rate. Besides, the increased revenue is reported to have been disappointing to Government officials, the users of the United States mail having resorted to numerous ways to reduce the expense of distributing literature, letters, circulars, bills and printed matter of all descriptions.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, May 3, 1933.

BLANC FIXE.—The blanc fixe market is slightly easier. Contract shipments are going forward in moderate volume. The pulp is quoted at from $42.50 to $45.00 per ton, in pulk; while the powder is selling at from 3 to 3½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are fairly satisfactory. The contract movement is seasonal. Prices are generally holding to schedule. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds in drums, at works.

CASEIN.—The casein market advanced. Domestic standard ground is quoted at 8¼ to 8½ cents and finely ground at 9 to 10½ cents per pound. Argentine standard ground is selling at 9½ cents and finely ground at 10½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is persistent. Contract shipments are moving in good volume. Solid caustic soda is quoted at from $2.25 to $2.60; while the flake and ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is practically marking time, due to the uncertainty of foreign exchange. Imported china clay is quoted at from $10 to $15 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at mine.

CHLORINE.—Trading in the chlorine market is fairly active. The contract movement is well up to average. Prices are holding to schedule. Chlorine is quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is displaying strength. Grades of gum rosin used in the paper mills are quoted at from $4.10 to $4.35 per 280 pounds, in barrels, at works; while wood rosin is selling at $2.90 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Most of the business transacted in the salt cake market is routine. Salt cake is quoted at from $12.50 to $13.00; chrome salt cake at from $11.50 to $12.50 per ton, at works; imported at from $12.50 to $13.00 per ton, on dock.

SODA ASH.—Steadiness prevails in the soda ash market. The contract movement is fairly heavy. Prices are holding to schedule. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—The starch market is more buoyant than for some time past. Recent advanced quotations are well maintained. Special paper making starch is selling at $2.49 per 100 pounds, in bags; and at $2.76 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Sentiment in the sulphate of alumina market is improving. Prices are holding to schedule. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Business in the talc market is moderately active. Prices are holding to formerly quoted levels. Domestic talc is offered at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $18 to $22 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	38.00
Bonds	4.75	@	53.25
Index	6.00	@	12.00
Writings—			
Extra Superfine	6.50	@	15.00
Superfine	6.25	@	14.75
Tub sized	4.50	@	7.00
Engine sized	4.00	@	5.00
Book, Cased—			
S. & S. C.	4.25	@	5.00
M. F.	3.75	@	4.25
Coated and Enamel	5.00	@	9.00
Lithograph	5.00	@	9.00
Tissues—Per Ream—			
White No. 1	.50	@	.70
White No. 2	.45	@	.60
Anti-Tarnish M. G. only	.65	@	.70
Colored	.70	@	.90
Kraft	.65	@	.70
Manila	.55	@	.60
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.09¾	@	—
No. 2	.11¾	@	—
Bleached, basis 20 lbs.	.11¾	@	—

(Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Side Runs	25.00	@	—
Kraft—			
No. 1 Domestic	4.50	@	4.75
No. 2 Domestic	2.75	@	3.00
Southern	2.62½	@	3.00
Imported	2.75	@	3.50
Boards—per ton—			
News	32.50	@	35.00
Straw	29.50	@	31.50
Chip	30.00	@	32.50
Binders' Boards	62.00	@	70.00
Kraft Liner	40.00	@	45.00
Standard 85 Test			
Jute Liner	27.75	@	30.00
Sgl. Mla. Ll. Chip	37.50	@	40.00

(F. o. b. Mill)

Wood Pulp Boards	70.00	@	80.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	18.50	@	20.00
Dry	19.00	@	21.00

(F. o. b. Mill)

No. 1 Domestic and Canadian	14.00	@	22.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	1.80	@	2.25
Easy Bleaching	1.60	@	1.75
No. 1 strong unbleached	1.40	@	1.60
Mitscherlich unbleached	1.60	@	1.75
No. 2 strong unbleached	1.25	@	1.35
No. 1 Kraft	1.25	@	1.40
No. 2 Kraft	1.10	@	1.15
Sulphate—			
Bleached	1.85	@	2.15

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—			
Bleached	1.75	@	3.75
Easy Bleaching	1.60	@	1.75
News	1.40	@	1.65
Mitscherlich unbleached	2.00	@	2.25
Kraft (Domestic)	1.25	@	2.75

(Delivered Paper Mills)

Soda Bleached	2.00	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	3.80	@	4.25
New White, No. 2	3.00	@	3.25
Silesias No. 1	3.25	@	4.00
New Unbleached	5.25	@	5.75
New Soft Blacks	2.75	@	3.00
Blue Overall	3.00	@	3.50
Fancy	1.25	@	1.50
Washables	1.00	@	1.25
Mixed Khaki Cuttings	2.50	@	3.00
Pink Corset Cuttings	2.75	@	3.25
O. D. Khaki Cuttings	3.00	@	3.25
Men's Corduroy	1.00	@	1.25
New Mixed Blacks	2.25	@	2.50

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	2.25
White, No. 2—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.00	@	1.25
Black Stockings	2.00	@	2.25
Roofing Rags—			
No. 1	.53	@	.58
No. 2	.48	@	.53
No. 3	.43	@	.48
No. 4	.38	@	.43
No. 5A	.33	@	.38

Foreign Rags

New Rags

New Dark Cuttings	1.30	@	1.40
New Mixed Cuttings	1.50	@	1.60
New Light Silesias	3.00	@	3.25
Light Flannelettes	2.50	@	2.75
Unbleached Cuttings	4.50	@	5.00
New White Cuttings	4.00	@	4.25
New Light Oxfords	3.00	@	3.25
New Light Prints	1.85	@	2.25

Old Rags

No. 1 White Linens	5.25	@	5.50
No. 2 White Linens	4.50	@	4.75
No. 3 White Linens	3.25	@	3.75
No. 4 White Linens	1.75	@	2.25
No. 1 White Cotton	3.50	@	3.75
No. 2 White Cotton	2.75	@	3.25
No. 3 White Cotton	2.25	@	2.50
No. 4 White Cotton	1.40	@	1.50
Extra Light Prints	1.80	@	2.00
Ord. Light Prints	1.60	@	1.75
Med. Light Prints	1.40	@	1.55
Dutch Blue Cottons	1.35	@	1.40
French Blue Linens	1.80	@	1.90
German Blue Linens	1.70	@	1.80
German Blue Cottons	1.20	@	1.25
Checks and Blues	1.25	@	1.30
Lindsay Garments	.75	@	.80
Dark Cottons	.55	@	.60
Old Shopperies	.55	@	.60
New Shopperies	.60	@	.65
French Blues	1.25	@	1.30

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	.90	@	1.00
Domestic	1.00	@	1.10
Wool Tares, light	.70	@	.80
Wool Tares, heavy	.70	@	.80
Bright Bagging	.70	@	.75
Small Mixed Rope	.50	@	.60
Manila Rope—			
Foreign	1.35	@	1.40
Domestic	1.40	@	1.50
New Burlap Cut	1.00	@	1.50
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

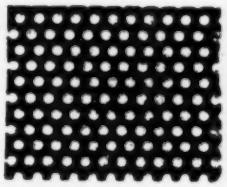
Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.00	@	2.10
Ordinary Hard White No. 1	1.70	@	1.80
Hard White No. 2	1.50	@	1.60
Soft White No. 1	1.45	@	1.55
Flat Stock—			
Stitchless	.65	@	.70
Overissue Mag	.65	@	.70
Solid Flat Book	.55	@	.65
Crumpled No. 1	.45	@	.50
Solid Book Ledger	1.50	@	1.75
Ledger Stock	.45	@	.55
New B. B. Chips	.20	@	.25
Manilas—			
New Env. Cut	1.35	@	1.45
New Cuttings	1.00	@	1.05
Extra No. 1 old	.80	@	.90
Print	.35	@	.40
Bogus Wrapper	.30	@	.35
Container	.25	@	.30
Old Kraft Machine—			
Compressed bales	.65	@	.75
News—			
No. 1 White News	1.00	@	1.05
Strictly Overissue	.50	@	.55
Strictly Folded	.43	@	.48
No. 1 Mixed Paper	.25	@	.30

Perforated Metal Screens

For Pulp and Paper Mills



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All types and shades of Oxides of Iron

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Dietz Towel Interfolding Machines also

TOILET PAPER MACHINES

For making Toilet and Paper Towel Rolls (With or without perforations)

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For Making Wire-Stitched Toilet Tubes

Sanitary Crepe Towel Machines, Roll Tighteners, Slitting and Rewinding Machines, Drop Roll Slitting Machines, Photo Mount Beveling Machines, Rotary Card Cutting Machines, etc.
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PATENTED METHOD WINDS ROLLS WIRE SIDE OUT IF REQUIRED

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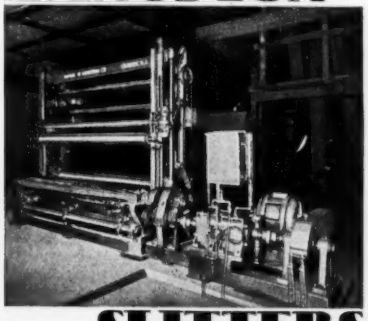
LANGSTON



SLITTERS

The heavy-duty Langston Slitter can be had in any width, to wind any diameter. Use it as a winder or as a rewinder. Speed up to 3000 feet per minute. Makes rolls of uniform density, square-edged. Langston's Shear-Cut makes no dust—the paper is *clean-cut*, not ground apart. A catalog is yours for the asking.

SAMUEL M. LANGSTON CO., Camden, N. J.

Twines
(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finished Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.11¾	@	.12¾
Tube Rope—			
4-ply and larger	.08¾	@	.10¾
Fine Tube Rope—			
4-ply	.12¼	@	.12¾
3-ply	.13¼	@	.13¾
2-ply	.14¼	@	.14¾
Paper Makers Twine Balls	.09¼	@	.11¼
Box Twine, 2-3 ply	.11¼	@	.12¾
Jute Rope	.09	@	.10
White Hemp	.12¾	@	.15¾
Java Sisal—			
No. 1 Basis	.10	@	—
No. 2 Basis	.09	@	—
New Zealand Sisal	.10	@	—
Sisal Lath Yarn—			
No. 1	.12	@	.14
No. 2	.10	@	.12
Manila Twine	.23	@	.28

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07½
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04½	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¾	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¾	@	.06¼
Sulphite Screenings	.03	@	.03½
Manila Tissue	.07	@	.07½
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	27.50	@	—
Solid News	30.00	@	—
Manila Lined Chip	37.50	@	—
Patent coated	47.50	@	—
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.50	@	1.55
No. 1 Hard White	1.40	@	1.45
No. 1 Soft White	1.00	@	1.10
Ledger & Writings	.55	@	.60
Solid Books	.45	@	.50
Blanks	1.00	@	1.05
Krafts	.70	@	.80
New Kraft Cuts	1.15	@	1.25
Manila Env. Cuts	1.25	@	1.30
Ex. No 1 Manila	.90	@	1.00
Print Manila	.30	@	.40
Overissue News	.45	@	.50
Old Newspapers—			
No. 1	.45	@	.50
Mixed Papers—			
No. 1	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.09
Manila Sul., No. 1	.03	@	.05
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¾	@	.04¼
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.02¾
Common Bogus	.03	@	.04
(Delivered Philadelphia)			
News Print Rolls	46.00	@	—
Straw Board	32.00	@	—
News Board	30.00	@	—
Chip Board	30.00	@	—
Wood Pulp Board	70.00	@	80.00
Binder Boards—			
No. 1, per ton	73.00	@	75.00
No. 2, per ton	62.00	@	65.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25
Khaki Cuttings—			
No. 1 O.D.	.03	@	.03½
No. 2 Mixed	.02½	@	.03
Corduroy	.02	@	.02½
New Canvas	.03½	@	.04
New Black Mixed	.02½	@	.03

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01	@	.01½
Blue Overall	.03	@	.03½
Cottons—According to grades—			
Washable, No. 2	.01	@	.02
New Blue	.01	@	.02
Fancy	.01½	@	—
New Black Soft	.02	@	.03
New Light Seconds	.01	@	.02
New Dark Seconds	1.50	@	1.75

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.00
Miscellaneous	1.75	@	2.00
M. G.	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.80

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	—
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	1.60	@	1.70
No. 2 Hard White	1.50	@	1.60
No. 1 Soft White	1.40	@	1.45
No. 2 Soft White	1.10	@	1.15
No. 1 Mixed	.50	@	.60
No. 2 Mixed	.40	@	.50
Solid Ledger Stock	1.20	@	1.25
Writing Paper	.65	@	.70
No. 1 Books, heavy	.55	@	.60
No. 2 Books, light	.40	@	.45
No. 1 New Manila	1.10	@	1.15
No. 1 Old Manila	.60	@	.65
Print Manila	.40	@	.45
Container Manila	.40	@	.45
Old Kraft	.80	@	.85
Common Paper	.22½	@	.25
No. 1 Mixed Paper	.20	@	.30
Straw Board, Chip	.20	@	.30
Binders Board Chip	.20	@	.30
Corrugated Board	.35	@	.40
Overissue News	.50	@	.60
Old Newspaper	.40	@	.45

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05¾	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	—	@	.04¾
No. 2 Kraft	.02¾	@	—
(F. o. b. Boston)			
Southern Kraft	.02¾	@	—
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	—	@35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	30.00	@	—
Chip Board	27.50	@	—
Chip Board (Creasing)	27.50	@	30.00
Single Manila Lined Chip	—	@	37.50
Single White, Patent Coated News Board—			
Bender	45.00	@	55.00
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Soft White	1.25	@	1.40
No. 1 Old Manila	.50	@	.60
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.40	@	.50
Solid Ledger Books	1.20	@	1.40
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.60	@	.70
No. 1 Books, heavy	.55	@	.65
No. 1 Books, light	—	@	.30
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.50	@	.60
White Blank News	.85	@	.90
No. 1 Kraft	.80	@	.85
Manila	.80	@	.90
No. 1 Mixed Papers	.20	@	.22½
Print Manila	.30	@	.40
Overissue News	.35	@	.45
Old Newspapers	.32½	@	.37½
Box Board, Chip	.17½	@	.20
Corrugated Boxes	.25	@	.30
Screening Wrappers	.25	@	.32½

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.00	@	—
Domestic	—	@	.60
Manila Rope—			
Foreign	—	@	1.40
Domestic	—	@	1.60
Transmission Rope	—	@	.90
Mixed Strings	.25	@	.30
Jute Rope	—	@	.75
Jute Carpet Threads	.25	@	.30
Bleachery Burlap	1.75	@	2.00
Scrap Burlap	.50	@	.62½
No. 1 Scrap Burlap	.65	@	.75
Scrap Sisal	.80	@	—
Scrap Sisal for shredding	—	@	.90
Wool Tares, heavy	.65	@	.75
New Burlap Cutting	.75	@	.90
Australian Wool Pouches	1.75	@	2.00
Heavy Baling Bagging	.90	@	1.10
Paper Mill Bagging	.30	@	.35
Bagging No. 2	.20	@	.25
No. 1 Burlap	1.75	@	2.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	—	@	.01½
New White No. 1	—	@	.03½
New White No. 2	.02¾	@	.03¼
Silesias No. 1	—	@	.03
New Black Silesias	.02½	@	.02¾
New Unbleached	—	@	.04½
Fancy	—	@	.02½
Washable	—	@	.01½
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03½
O. D. Khaki	.03½	@	.03¾
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	.04	@	.04¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	1.50	@	1.75
White No. 2—			
Repacked	.02¼	@	.02½
Miscellaneous	.02	@	.02¼
Twos and Blues	.90	@	1.00
Thirds and Blues—			
Repacked	.75	@	.85
Miscellaneous	.70	@	.75
Black Stockings	2.00	@	2.25
Roofing Stock—			
No. 1	.40	@	.45
No. 2	.35	@	.40
No. 3	.25	@	.30

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.50	@	.60
New No. 1 White Shirt Cuttings	3.75	@	4.00
Dutch Blues	1.25	@	1.50
New Checks & Blues	2.25	@	2.50
Old Fustians	—	@	.75
Old Linsey Garments	.55	@	.65

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.09¾	@	—
No. 2 Sulphite	.08	@	—
No. 1 Colored	.10¾	@	—
No. 2 Colored	.08½	@	.10½
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.00	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—
(F.O.B. Cars Toronto)			
News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

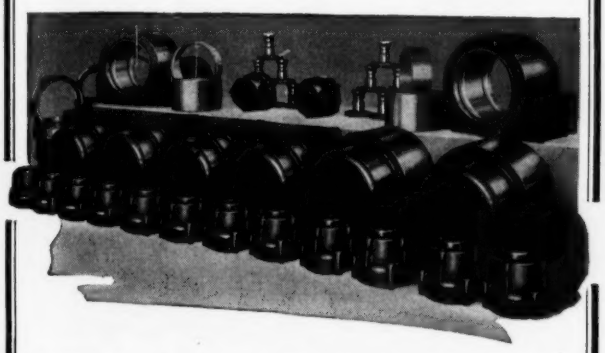
Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	48.00	@	58.00
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	1.80	@	—
Soft White	1.40	@	—
White Blk. News	1.25	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	—
Light and Crumpled Book Stock	.80	@	—
Ledgers and Writings	1.00	@	—
Manilas—			
New Manila Cut	1.25	@	—
Printed Manilas	.55	@	—
Fancy Shirt Cuttings	.02¼	@	.02½
Kraft	1.25	@	—
News and Scrap—			
Strictly Overissue	.50	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.04¼	@	.04¾



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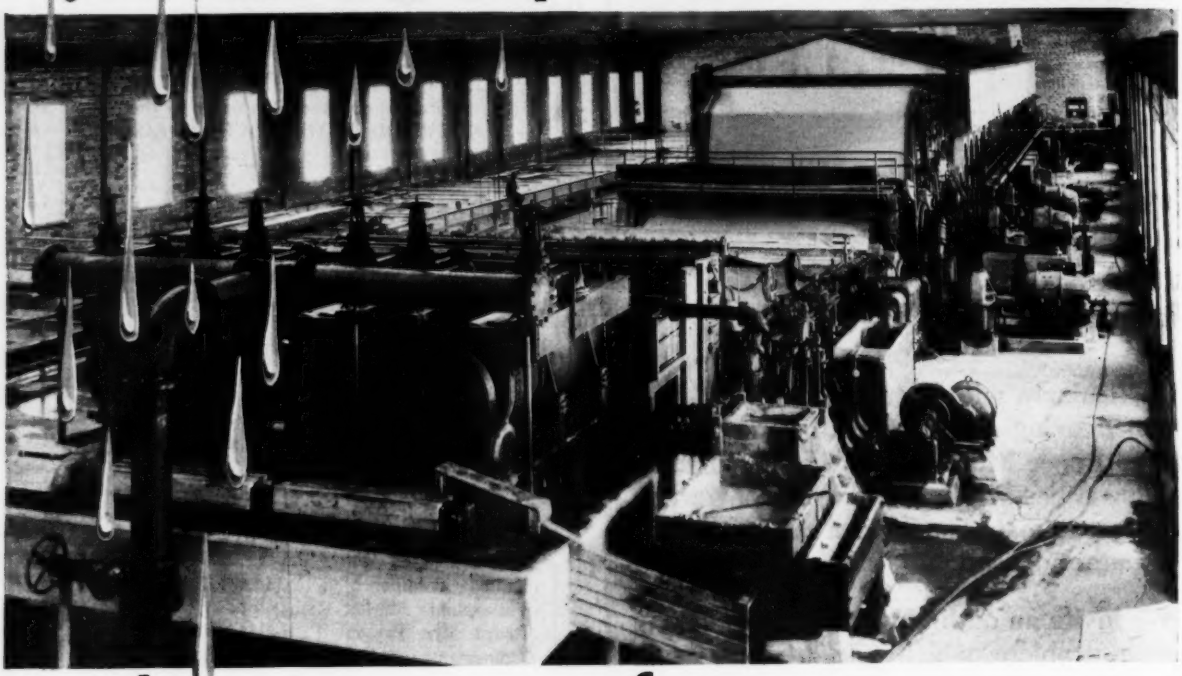
the Enemy of Oil Lubrication



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